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Workbook 22: Workstation Overview and General Purpose Utilities Training

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Workbook 22:
Workstation Overview and General Purpose Utilities Training

HOSC-WKBK-1040

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Ground Systems Department
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Welcome

Welcome to Huntsville Operations Support Center (HOSC) training provided by the HOSC Training Team (HTT).

If you are interested in scheduling additional training, submit a training request form via the Internet. The homepage can be accessed through a secure connection at:

https://red-dwarf.msfc.nasa.gov/webdoc/training/htt.html

Another option is to contact the HOSC Training Coordinator, Cindy Jorgensen, at (256) 461-4927.

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Workbook Overview

The majority of the workbooks are designed to be self-paced requiring very little assistance from an instructor. The following table lists the workbooks and their associated course number:

Workbook Numbering System

Workbook Number	Title	Associated Course
Workbook 1	HOSC End-User Software Training	HOSC-1000 HOSC-1010 HOSC-1020 HOSC-1030
Workbook 2	Using the Databases	HOSC-2050
Workbook 3	Using the Exception Monitor Application	HOSC-2060
Workbook 4	Using the Display Generation and Operation Applications	HOSC-2070
Workbook 5	Using the Computation Generation and Operation Applications	HOSC-2080
Workbook 6	Using the Scripting Applications	HOSC-2090
Workbook 7	Using the NRT Data Request Applications	HOSC-2100

Workbook Numbering System (Continued)

Workbook Number	Title	Associated Course
Workbook 8	Using Applix	HOSC-2110
Workbook 9	Using FrameMaker	HOSC-2130
Workbook 10	Using Electronic Mail	HOSC-2140
Workbook 11	Using the Payload Information Management System (PIMS)	HOSC-2150 HOSC-2160
Workbook 12	Using the Pixmap Editor	HOSC-2170
Workbook 13	Using the Ground Support Equipment Packets Application	HOSC-2180
Workbook 15	Using the End-User Command Applications	HOSC-2120
Workbook 22	Workstation Overview and General Purpose Utilities Training	HOSC-1040
Privileged Applications		
Workbook 16	Using the Privileges within the Database Applications	HOSC-3000
Workbook 17	Using the Command System Management Application	HOSC-3010
Workbook 18	Using the User Configuration Management Application	HOSC-3020
Workbook 19	Using the System Monitor and Control Applications	HOSC-3030 HOSC-3040
Workbook 20	Using the Data Packet Generator Application	HOSC-3050
Workbook 21	Using the Database Monitor and Control Application	HOSC-3060

This workbook covers the following:

HOSC-1040 - Workstation Overview and General Purpose Utilities Training
During the general purpose utilities training, users will become familiar with the basics of the workstation, keyboard, and EHS software; learn the nuances of logging in to the workstation and accessing the EHS software; and use the file and utilities applications available from the Launchpad.

Workbook Layout

The workbooks include a welcome section that details how the document is divided into modules as well as what is contained within each module. The modules include a discussion of the main topic of the module, step-by-step "Try It..." exercises and review questions.

This workbook is unique in that it describes file and utilities applications provided by the Enhanced HOSC Software. These particular applications are provided to assist you, the user, in accessing and manipulating files and other utilities available in the EHS software. This course will provide introduction to the purpose and structure of the software and will set you on a path toward understanding the applications and mastering the manipulation of them.

This workbook and the accompanying course are divided into five modules. The first module provides information on logging in to the workstation and accessing the EHS software. The second module familiarizes you with the basics of the workstation, keyboard, and EHS software. The modules that follow discuss the Message Handler application and the file and utilities applications available from the Launchpad menus. An acronym list, glossary and appendices are included for your reference. The five modules include:

Module 1: *The Launchpad*
Module 2: *Workstation Familiarization*
Module 3: *The Message Handler*
Module 4: *Launchpad File Menu Applications*
Module 5: *Launchpad Utilities Menu Applications*

Given the extensive technical requirements, extreme effort has been taken to make the software as intuitive and user-friendly as possible. Hopefully, your experience with the software will be rewarding, and you'll find it satisfies your individual needs.

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Module 1
The Launchpad

Objectives

Upon completion of this module, you should be able to:

- Login to an Enhanced Huntsville Operatations Support Center (HOSC) System (EHS) workstation
- Understand what determines your Launchpad configuration
- Identify the Launchpad menus

System Initialization

When you obtain the necessary HOSC account, you'll be provided a username and a temporary password. These two items are required before you can login and begin using the HOSC software.

Once you successfully log into an EHS system, two EHS applications are invoked, Launchpad and Message Handler. In addition, login initiates the Netscape License Agreement (see Figure 1-1. Netscape License Agreement). Acceptance of the Netscape License Agreement is required to start EHS web applications. If you accept the Netscape License Agreement, both Netscape and KeepAlive are invoked. Netscape is shown as an icon (typically hidden behind the Message Handler application) and KeepAlive is shown as a window (see Figure 1-2. Startup applications).

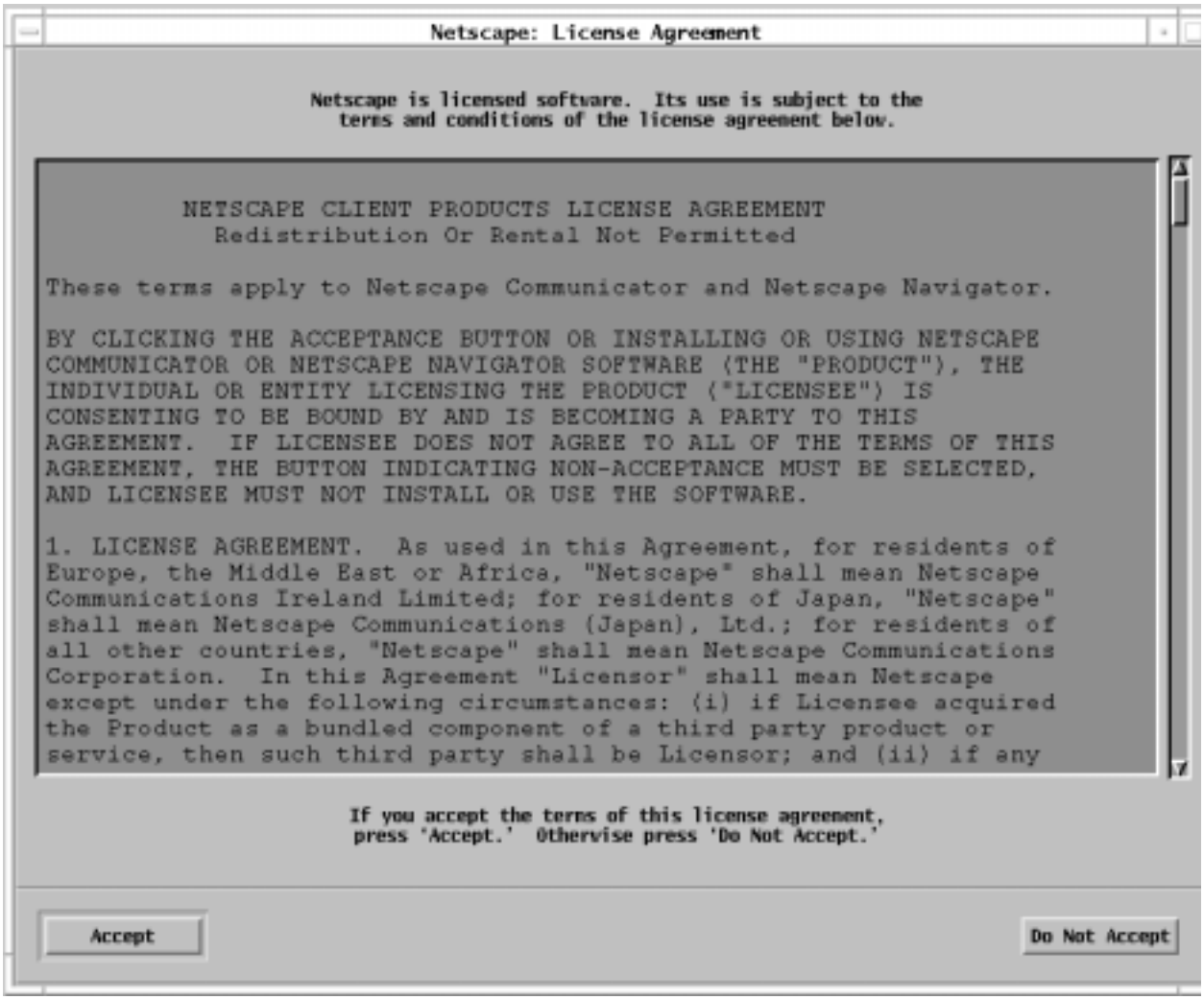

Figure 1-1. Netscape License Agreement

Note: If you decline to accept the Netscape License agreement, you won't be able to start EHS web applications.

Note: The login process can take several minutes. It is recommended that you allow all login processes to fully execute before attempting to initiate additional EHS applications.

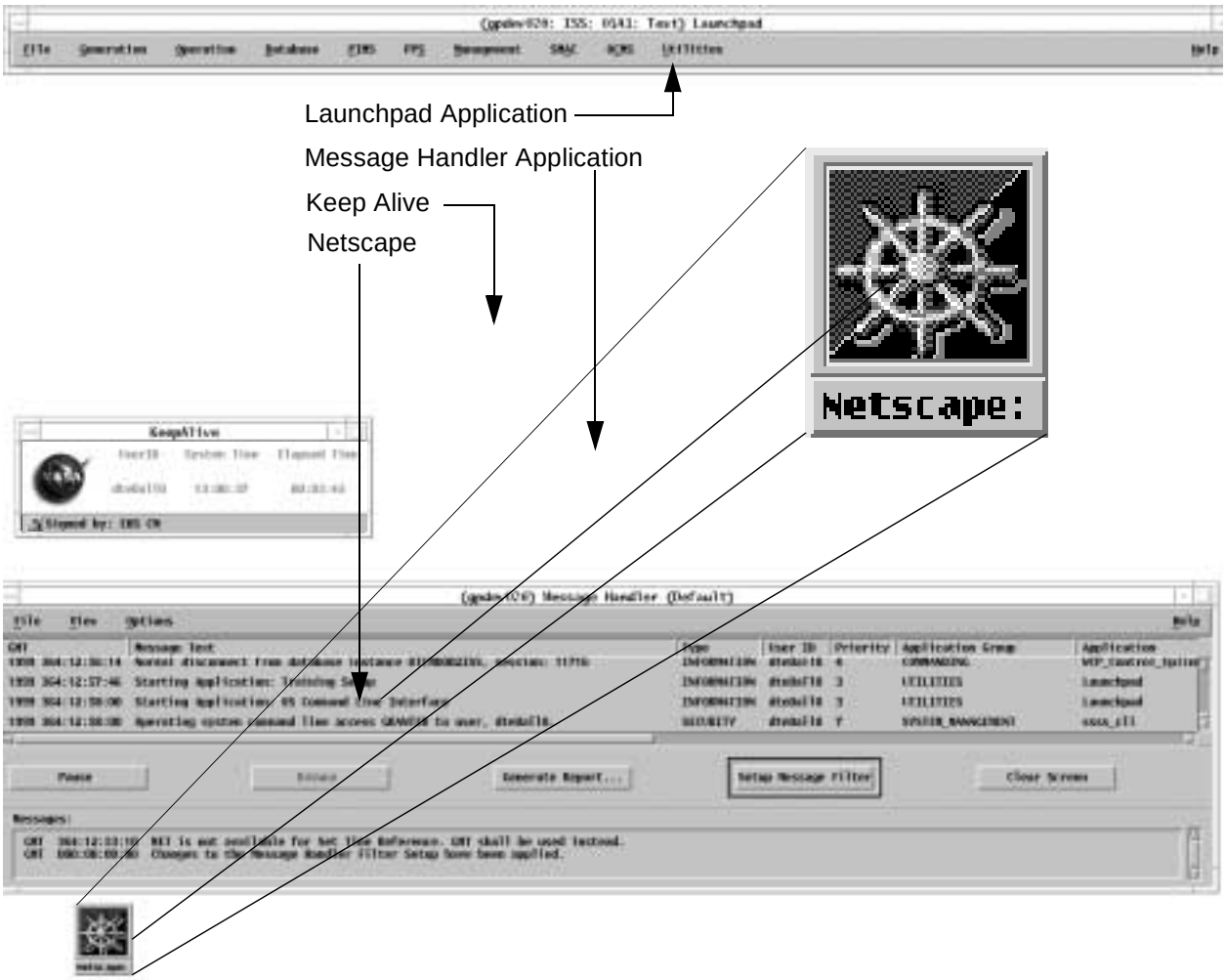

Figure 1-2. Startup applications

KeepAlive ensures that EHS web application cookies remain active on your system. The **KeepAlive** window is shown in Figure 1-3. KeepAlive window.

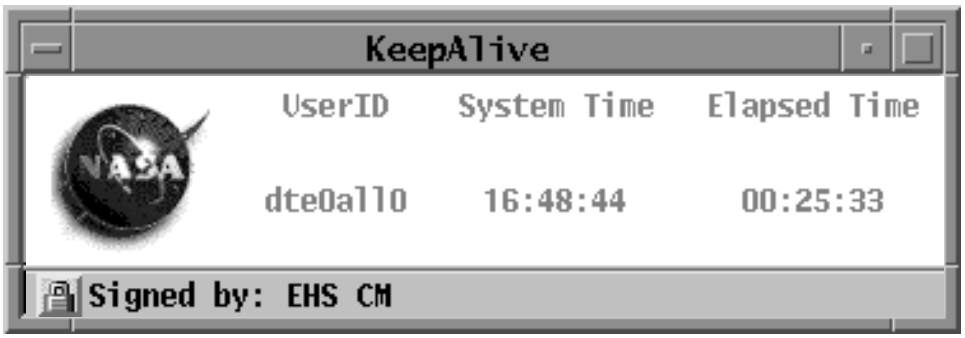

Figure 1-3. KeepAlive window

Note: If you dismiss the KeepAlive application, EHS web applications will not function correctly.

The Launchpad

The Launchpad is the umbrella application from which all other HOSC applications are invoked (see Figure 1-2. Startup applications). Essentially, it is a main application window. Just like other windows, it can be iconified. The Launchpad, however, has nothing displayed in its work area. It is initiated at system startup and cannot be closed without exiting the HOSC application software. Included in the title bar of the **Launchpad** is the name of the workstation you are using, the Mission, Operational mode, and Project (MOP), and the name of the application **(Launchpad)**.

The suite of applications available from the Launchpad is organized by function under several menus. The menus, applications, and the privileges/configurations available to you depend on the project you are supporting, the configuration of the workstation you are using, and your user profile. This information is maintained in the Launchpad Configuration File.

Based on the above criteria, your Launchpad may have up to eleven menus:

- **File**
- **Generation**
- **Operation**
- **Database**
- **PIMS**
- **PPS**
- **Management**
- **SMAC**
- **OCMS**
- **Utilities**
- **Help**

Exercise

Instructions

In this exercise you will login to your workstation using the Login name and password provided to you by the instructor.

Try It...

1. From the login screen, click with the left mouse button in the **Login:** text field, enter your username, and press Enter.

2. Enter your password and press Enter again. This should initialize the system and invoke the Launchpad and Message Handler applications.

3. When the Netscape License Agreement is invoked, click on Accept.

Note: If the system responds with: `Login incorrect`, repeat the login procedure, making sure that you type your username and password exactly as provided. These fields are case sensitive. If you still can't gain access to the system, contact your instructor.

Summary

The EHS software may be accessed via an EHS workstation using an established account. Once you login, the Launchpad and Message Handler applications will be invoked. Acceptance of the Netscape License Agreement is required to start EHS web applications. The suite of applications available from the Launchpad, organized by function, will be directly related to the type of project supported, the workstation configuration, and the user profile.

Questions

Instructions

Indicate the answers for each question below. The correct answers are given immediately following the questions.

1. What are the repercussions if you decline to accept the Netscape License agreement?

2. What determines which applications are available to you from the Launchpad?

3. How can you exit the Launchpad application without logging off the system?

4. What could you determine from the label **(gpehs059: ISS: TST1: Test)** on your **Launchpad** title bar?

Answers

1. You won't be able to start EHS web applications.

2. The type of project supported, the workstation configuration, and your user profile determines what applications are available to you from the Launchpad.

3. You can't.

4. You could determine the name of the workstation you are using and the MOP that is currently loaded. The workstation is **gpehs059**. The mission is **TST1**. The operational mode is **Test**. The project is **ISS**.

Module 2
Workstation Familiarization

Objectives

Upon completion of this module, you should be able to:

- Demonstrate the use of accelerator keys and keyboard mnemonics
- Identify main window components
- Demonstrate the various mouse functions

Workstation Requirements

The Huntsville Operations Support Center (HOSC) software was developed specifically to run on a Silicon Graphics Indy™ (SGI) workstation. If you are using a comparable workstation, you'll need to refer to its owner's guide for hardware-specific information.

The standard HOSC hardware configuration is an SGI workstation with:

- 128 Megabyte (MB) Random Access Memory (RAM)
- 19" monitor
- 2 Gigabyte (GB) hard disk space

Information regarding the operation of this workstation may be obtained from the Indy™ Workstation Owner's Guide, Document Number 007-9804-030, which is available from the HOSC Technical Library.

Key Definitions

From within a window, users may use Tab to move from menu item to menu item and direction keys (↑, ↓, ←, →) to move from one user interface component to the next.

Enter - may be used to perform the selected or the default mouse action within any window. The default action is usually a pushbutton command and is shown highlighted.

Caps Lock - In order for HOSC application software to correctly interpret mouse events, Caps Lock must be off.

Note: If you are experiencing problems selecting, dragging or resizing, ensure that the Caps Lock light is turned off. The Caps Lock light is located on the right-hand side of your keyboard above the numeric keypad. If the Caps Lock light is on, press Caps Lock to turn it off.

Ctrl - is used as the first key in many of the common keyboard accelerator combinations. Caution should be taken when pressing Ctrl because a concurrent keystroke may invoke an undesired action. Ctrl may also be used when you want to select multiple items from a list.

Alt - is used as the first key in the keyboard accelerator combinations available off the window menu.

Shift - may be used as one of the keys in a keyboard accelerator combination. Shift may also be used when you want to select multiple items.

Using Mnemonics

If you look at the items available on a menu, you'll see that one letter of each item on the menu is underlined (see Figure 2-1. Mnemonics and accelerators). This letter is that item's mnemonic. A mnemonic allows you to select and execute that menu item by entering the significant character (mnemonic).

Once a menu is open, you have only to enter the mnemonic to execute the function. For example, once the **File** menu is open, to execute the **Open** function, all you have to do is press O. Menu item mnemonics are similar to the mnemonics used to open menus except that they do not require that you press a combination of keys. That is, you do not have to hold down Alt and press the mnemonic key to execute a menu item mnemonic.

Note: Although menu item mnemonics may appear as capital letters, Shift is not required to initiate the mnemonic.

Figure 2-1. Mnemonics and accelerators

Using Accelerator Keys

Accelerator or shortcut keys are keyboard combinations that can be pressed to immediately initiate the selected function. Accelerator keys are different from mnemonics in that a menu need not be open for accelerators to work. Accelerator keyboard combinations usually include at least two keys that must be pressed simultaneously. If a menu item has an accelerator, the keyboard combination is written to the right of the menu item. The "+" in the menu's accelerator description means that the two keys listed must be pressed at the same time. As an example in Figure 2-1. Mnemonics and accelerators, you could invoke the **New** item under the **File** menu (without opening the menu), by simply holding down Ctrl pressing . N

Note: Although accelerators appear as capital letters, Shift is not required to initiate the accelerator unless explicitly stated.

Note: While all menu items have keyboard mnemonics, not all menu items have accelerators. The purpose of accelerators is to permit experienced users to perform various functions more rapidly. Accelerators do not introduce additional capabilities. All functions that can be performed with accelerators can be performed using your mouse to select items off of menus. Likewise, functions that cannot currently be performed using your mouse because they are "grayed out," cannot be performed using accelerators either.

Accelerators are application-specific but some accelerator key combinations have been reserved and may apply across all HOSC applications, while others are application-unique. Those accelerators that are reserved across all HOSC applications include:

Ctrl + A Select All

Ctrl + C Copy

Ctrl + D Delete

Ctrl + L Uplink

Shift + Ctrl + M	Clear Messages
Ctrl + N	New
Ctrl + O	Open
Ctrl + P	Print
Ctrl + Q	Exit
Ctrl + S	Save
Ctrl + V	Paste
Shift + Ctrl + V	Validate
Ctrl + X	Cut
Ctrl + Z	Undo

In no instance is an accelerator used to create an object in one application, used to destroy an object in another application.

Mouse Basics

The following section addresses how to use the mouse as an input device and more specifically, with the functioning of a three-button mouse.

Set functions have been assigned to the left mouse button. In general, the left mouse button is used to select items. The middle mouse button is used for move functions, and the right mouse button is used to invoke popup menus containing the more frequently used functions.

The following terms are used when referring to some of the mouse actions that you may be asked to perform:

Click
To press and release one of the three mouse buttons.

Double-Click
To rapidly press and release the same mouse button twice.

Drag
To press and hold down a mouse button while moving the pointer to another location on the screen.

Mouse Operations

The Mouse Pointer

As you move the mouse on your desk, the mouse pointer on the computer's screen should move similarly. Depending on the location of the pointer and the functions the system expects you to perform, the mouse pointer will change shape. The mouse pointer shape reflects its operational mode (text, selection, resize, etc.).

When the mouse pointer is over the standard screen backdrop on which all windows appear (also known as the "desktop"), the pointer is x-shaped. When you move the pointer over a window it changes to the arrow shape. The changing shape of the pointer provides a visual cue as to the mode in which the mouse is operating and the activity that the computer is expecting to be performed.

 - indicates that the mouse is positioned in a text field and the system is expecting you to either enter text, or to drag and select additional text to edit.

 - indicates that the system is expecting you to select an object or a user interface element.

 - indicates that the mouse is positioned over the desktop and the system is expecting you to identify the window you want to work with.

 - indicates that the system is processing data and is unavailable for additional input at this time.

 - indicates that the system is expecting you to move the selected element or object.

 - indicates that the mouse is positioned over a window border and the system is expecting you to resize the window to the right. An arrow facing the opposite direction indicates that you want to resize the window to the left.

 - indicates that the mouse is positioned over a window border and the system is expecting you to resize the window up. An arrow facing the opposite direction indicates that you want to resize the window down.

 - indicates that the mouse is positioned over a window border and the system is expecting you to resize the window up and to the right. Similar pointers are used to indicate that you want to resize the window up and to the left, down and to the right, and down and to the left.

 - indicates that you are trying to move the mouse from a secondary system modal window. A system modal window forces you to interact with the current window before you're permitted to exit and interact with another window.

Using the Mouse to Establish Focus

Typical user workspace may contain many windows. Each window is prepared to receive input from the keyboard, the mouse or both. The window you designate as the one to receive input is described as having input focus and is differentiated from the other windows by highlighting. Only one window has input focus at a time. This window is said to be the active window.

Through the Launchpad's **Utilities** menu, you can setup **Workstation Preferences** to handle either **Explicit** or **Implicit** input focus. The system default is to use **Explicit** input focus. When the mouse is in **Explicit** mode, you must click with your left mouse button on the window, you wish to work with. When the mouse is set up in **Implicit** mode and you move your mouse pointer over a window, it automatically becomes active.

When a window has input focus and is active, its outer border changes color. If there is more than one window open on the desktop and the windows overlap one another, the window that is given input focus usually moves to the top level and becomes active, obscuring those windows beneath it that do not have input focus (see Figure 2-2. Window with input focus). If the active window does not move to the top level, click on its title bar.

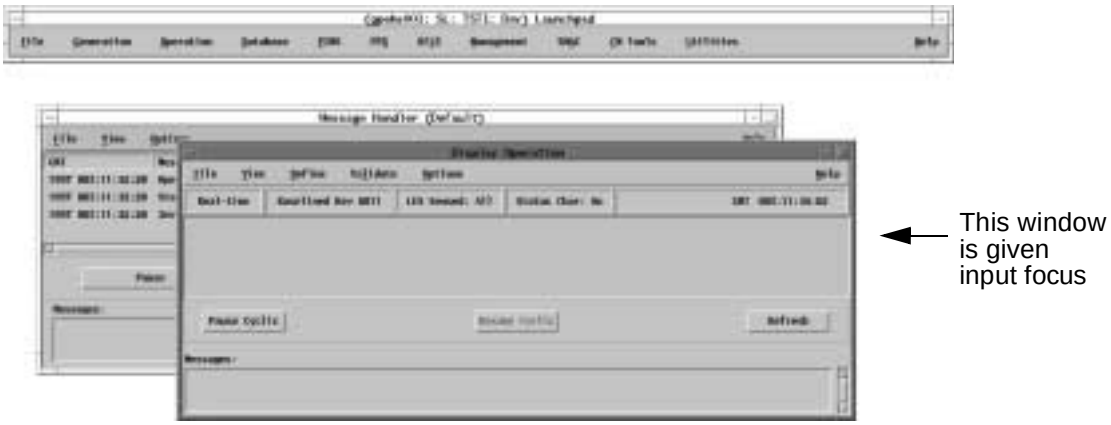

Figure 2-2. Window with input focus

Selecting Elements With a Mouse

Within a window you may find a variety of user interface elements (graphical objects, text fields, buttons, etc.). For some of these elements, such as a pushbutton, the only action you can take is to click on it. For other elements, the software may allow you to perform functions which add or alter its characteristics. For example, you may be able to change the width of a line, or change the format of data being displayed, or add text to a field, etc. In order to make these additions and changes, however, you must have the element selected.

The following are the most common methods of selecting a single element:

- While the mouse pointer is in the selection mode, you can move the pointer over the element you want and click with the left mouse button. This is probably the most common selection method.

- While the mouse pointer is in the text mode, you can select text elements by clicking and dragging the pointer across text in lists, fields, cells, etc. This highlights the text (in reverse video), allowing you to identify on a character-by-character basis, the specific text within a block that you wish to work with.

- While the mouse pointer is positioned within a work area (not over an element) and in the selection mode, you may be able to draw a bounding box which encompasses the item(s) you want selected. This method of selecting is used more often in drawing-type applications such as Display Generation.

- While the mouse is in select mode, you may be able to select one or more items using an application-specific menu item, such as **Select All** which is available on the **Edit** menu for some applications.

Regardless of how you select an element, the system will provide you with a visual cue to indicate that the element is selected. For example, selected text fields may be shown with a black border and a blinking I-beam insertion bar. Selected text may be shown highlighted. For primitive drawing objects (like rectangles, circles, and lines) created in Display Generation, selection "handles" are used to distinguish the selected object (see Figure 2-3. Only the rectangle is selected).

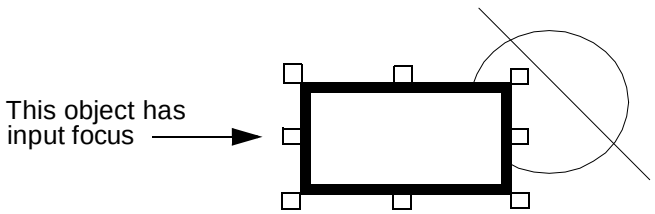

Figure 2-3. Only the rectangle is selected

Once you've selected a window element, your next step is to either select another element (see the next section), use available functions to manipulate the selected element, or cancel the selection. If no element within a window is active, subsequent keystrokes and mouse actions may have no effect. In addition, if you have the wrong type of element selected for the function you want to implement, subsequent keyboard or mouse actions may have no impact.

Selecting Multiple Elements

In the previous section, methods to select an element were addressed, but sometimes you may wish to select several elements at one time, so that you can perform a single function that impacts all the

selected elements simultaneously. The system provides different means to handle selecting multiple elements based on whether the items to be selected are graphic objects or text items included on a list (i.e., filenames, display names, computation names, etc.)

Selecting Multiple Graphic Objects

HOSC applications which include a drawing mode, such as Display Generation and FrameMaker, allow you to select multiple graphic objects using either Shift, a bounding box, or by using a menu item/dialog box.

As an example, maybe you'd like to change the line width on several Display Generation objects. Rather than going through the process of selecting an object, changing its line width, and then selecting the next object, you can use Shift to select all the objects and then change their line widths at one time. You do this by selecting the first Display Generation Object as described previously. Once you have selected the first object, hold Shift down and click on the second object, and then hold Shift down and click on the third, etc. (see Figure 2-4. The line, circle, and rectangle are all selected). If you are using this method to select multiple elements and you click on an element without holding down Shift, all previous selections are canceled and the new element is selected.

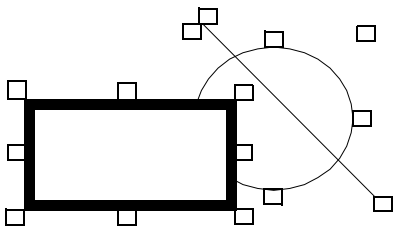

Figure 2-4. The line, circle, and rectangle are all selected

To use the bounding box to select multiple objects, position the mouse over the background or desktop and NOT over an object or window. Hold the mouse button down and drag the mouse. A bounding box or fence will be created as you drag. Envelope the elements you want to select within the bounding box and release the mouse. All elements encompassed by the box will be selected (selection handles will appear).

To use menu items, a tool palette or dialog boxes to initiate a select function, see the user guide for the particular application you are using.

Note: Within a drawing area, text objects may be considered a graphic element and therefore, use the same selection process.

Selecting Multiple Text Items from a List

Selection lists are provided so that you can select item(s) by name and then perform the desired operation on the referenced item. Within selection lists, the decision about whether to allow and how to implement multiple object selection is based on the intended purpose of the list. Four selection models are provided within the HOSC Application Software to select text from a list:

- Single selection model
- Browse selection model
- Multiple selection model
- Extended selection model

Note: In most cases, there is no way to tell, just by looking at a selection list, the type of selection model that is in effect. You'll have to experiment to determine the type of selection model that is in effect. For the single selection model, however, selected items are shown encompassed by dotted lines.

Single Selection Model

The single selection model is used to select an object if you can only perform a single operation using a single object at a time. To select an object, click on it. The selected object will be shown within a box. If you select a second object, the first becomes deselected (see Figure 2-5. Single selection model).

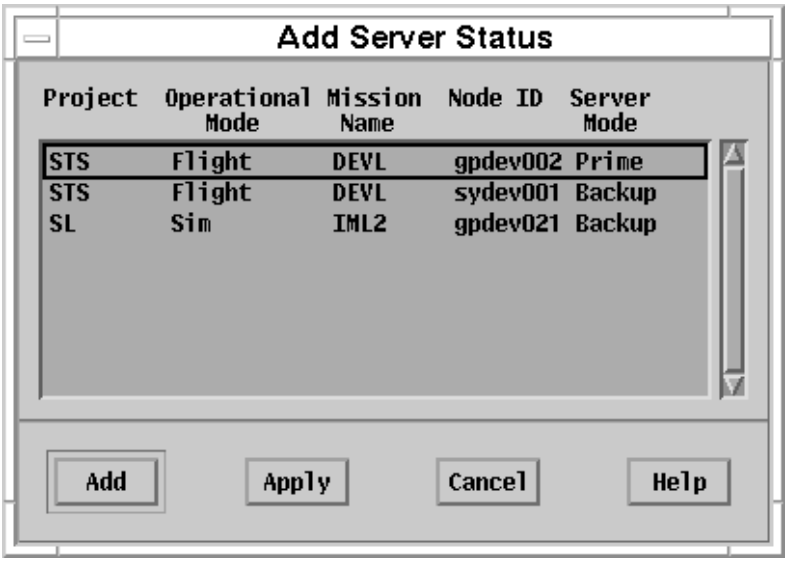

Figure 2-5. Single selection model

Browse Selection Model

The browse selection model is the same as the single selection model in that one and only one object can be selected at a time. In the browse selection model however, one object must always be selected and the selected item changes as the mouse is dragged through the list. When you release the mouse button, the object highlighted becomes selected. The browse selection model provides you with the opportunity to look at additional information about each item in the list before you release the mouse button and make a selection. For example, in the **File Types:** list shown in Figure 2-6. Browse selection model, as you drag your mouse through the items, the content of the **Files:** list changes to show you the files of that particular type. Only one file type can be shown at a time and when you release your mouse, the file type highlighted is selected.

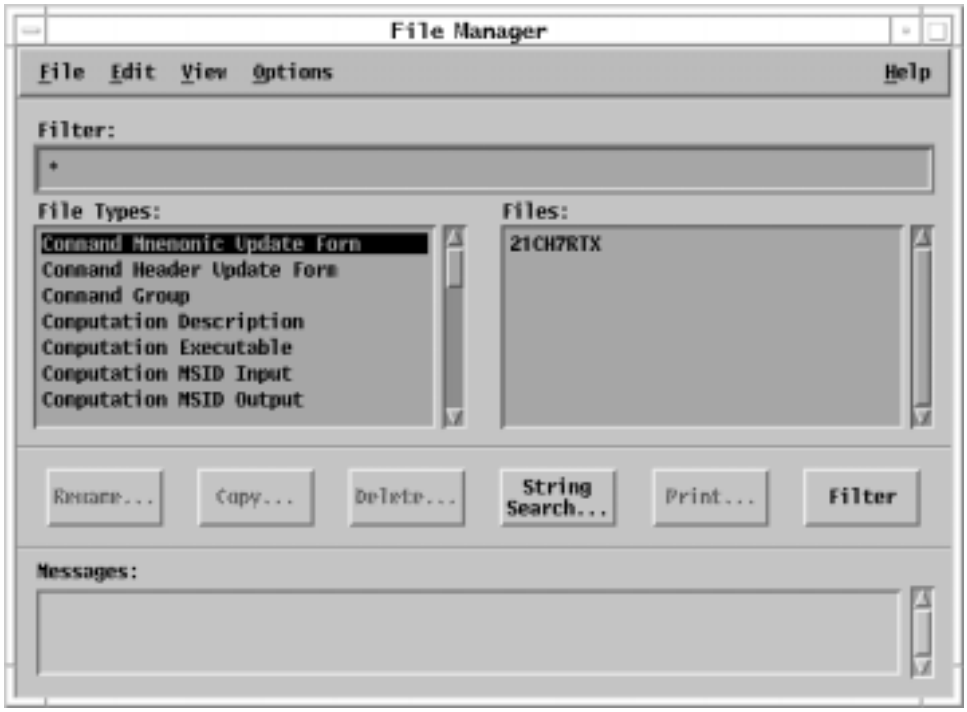

Figure 2-6. Browse selection model

Multiple Selection Model

The multiple selection model is used when you can perform an operation on more than one object at a time. The objects are referenced by name and the names are included on a list from which selections are made. To implement this selection method, you click on the first object's name on the list. If you click on a second object's name, it also becomes selected and shown in reverse video. You can select as many contiguous items as you wish. An example illustrating the multiple selection model can be found in the **Process Manager** main window (see Figure 2-7. Multiple selection model). Notice that all the selected items are contiguous.

Figure 2-7. Multiple selection model

Note: In some instances, you may be required to hold down Shift to implement the multiple selection model.

Note: If Shift is required to implement the multiple selection model, and you click on an item without holding it down, all items selected will become deselected and only the last item will be selected.

Note: If you select an item from a list and then skip several items and select another one, all items in between will become selected. This selection model only allows you to select contiguous text.

Extended Selection Model

The extended selection model is the most flexible. It allows you to select any item on a list. You can select and deselect the items at random. If you click on an item already selected, it will become deselected. In some instances, you may be required to hold down Ctrl to implement the extended selection and deselection model. An example of the extended selection model can be found on the Select MSIDs dialog box (see Figure 2-8. Extended selection model). Notice that any item from the list can be added individually.

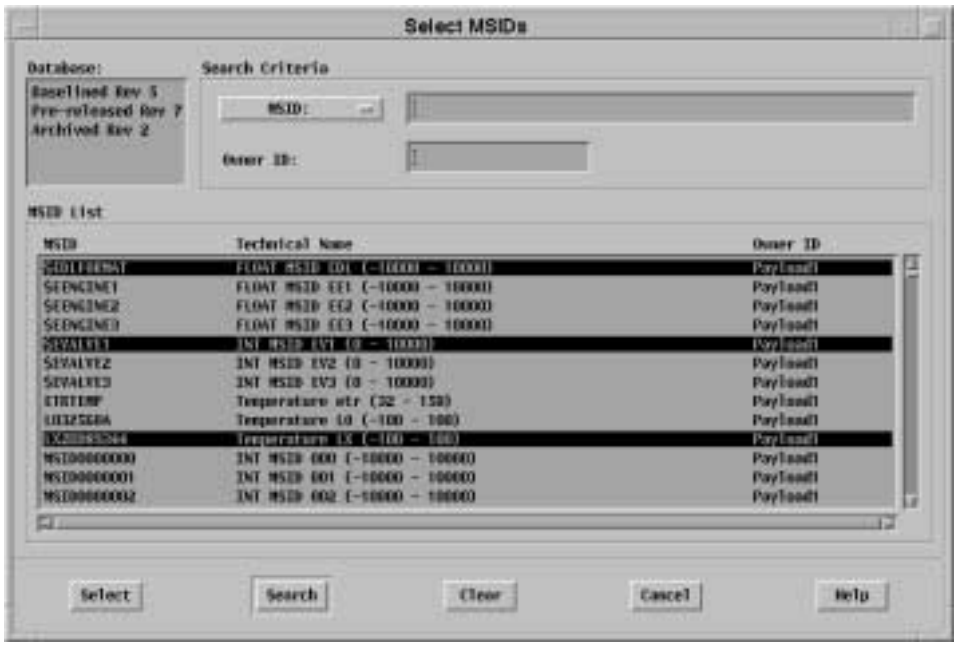

Figure 2-8. Extended selection model

Note: If Ctrl is required to implement the extended selection model, and you click on an item without holding it down, all items selected will become deselected and only the last item will be selected.

Using the Mouse to Copy and Paste Text

The mouse can be used to copy and paste text within text fields. Use the left mouse button to give the appropriate text field active focus. Position the I-beam insertion bar at the beginning of the text you want to copy. Push and hold down the left mouse button and drag the mouse so that the text you want to copy is highlighted (selected). Once all the text you want to copy is selected, release the left mouse button. Move the pointer to the text field location where you want to paste the selected copy and click the middle mouse button. The previously selected text will be pasted into the new location. Once all the text you want to copy is selected, you can also press the middle mouse button and drag the text to a new field.

Moving Windows and Objects

To move a window on the desktop, press and hold down either the left or middle mouse button while the pointer is over the application title bar. Drag the selected objective to the desired location. A shadow box on the screen represents the window during the move. When you release the mouse button, the window will be redrawn in the new location.

To move an object within a drawing area, select the object as described previously. Selection “handles” will appear. Position the mouse pointer over the selected object, and press and hold down the middle mouse button. The mouse pointer will change shape to indicate that it is expecting

to perform a move function. Drag the selected object to the desired location and release the middle mouse button.

Window Components

Working with Windows

The backdrop on which all windows are opened is referred to as the desktop. A typical HOSC workstation screen is shown with several windows open in Figure 2-9. Typical workstation screen. You can move windows to different locations on the desktop, you can resize them, or you can place them on top of each other. To “raise” a window to the top level so you can see all of it and work with it, you position the mouse pointer over the window you want and click the left mouse button. This brings that window to the top of all other windows and makes it active. The active window is distinguished from other windows by color.

There are several types of windows:

- Main application - These windows serve as the “home” window for each application. This is the window from which all associated application functions are initiated.
- Database application - These windows function the same as main application windows, except that since they were created using a commercial database application, Oracle. They present a different look and do not adhere to the standard user interface having a unique menu bar.
- Mini-application - These windows are identical to main application windows except that they are invoked from an application main window. These windows may also be closed without it closing (exiting) the originating application.
- Dialog boxes - These windows do not have menu bars and are used to solicit additional information prior to implementing its specific function.
- Message dialog boxes - These windows are like dialog boxes except that they are used to warn you of errors or conditions which might impact your work. They may also be used to confirm your desire to implement the selected function.

Figure 2-9. Typical workstation screen

Application Main Windows

Application main windows are different from dialog boxes in that they have minimize and maximize buttons and a menu bar which, at a minimum, includes **File**, **View** and **Help** as depicted in Figure 2-10. Standard main window features. Dialog boxes, on the other hand, are invoked from main application windows and may or may not have minimize and maximize buttons depending on their content and function. A dialog box does not have a menu bar and its window resize functions may be restricted.

The application main window depicted in Figure 2-10. Standard main window features, shows those elements that are common across many HOSC applications. Each of these common window components is described in the following sections.

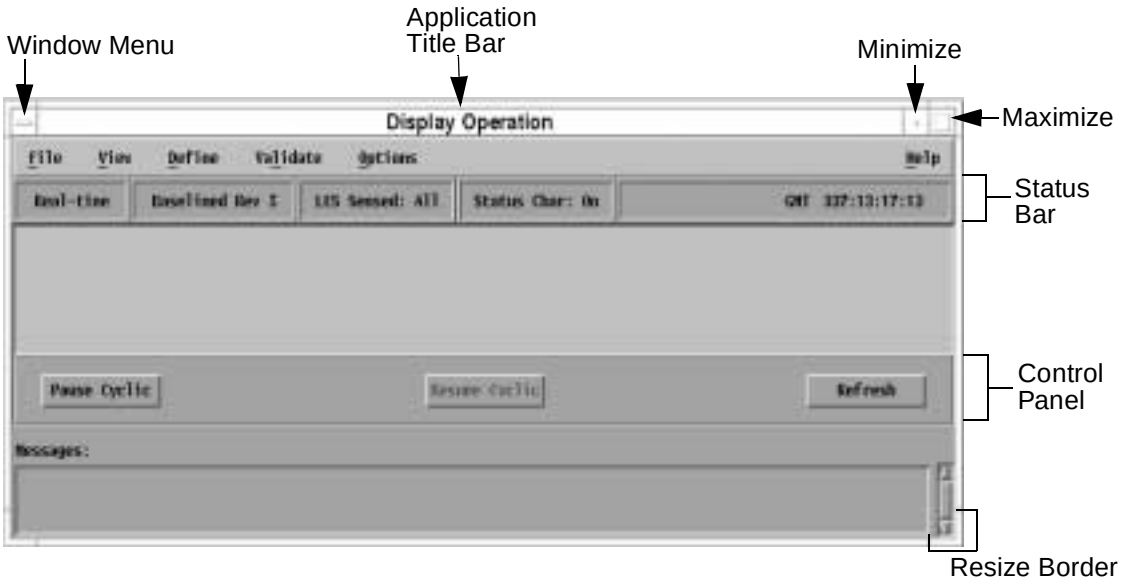

Figure 2-10. Standard main window features

Application Title Bar

The application title bar is where the application title is shown, as well as the name of the currently opened file (if applicable). In this case, the filename may be any User-generated Data Element (UDE) that you created and named earlier, or it may be a file you have yet to save, and therefore is labeled "Untitled." See Figure 2-11. Typical application title bar for an example of a typical application title bar. The application title bar may also include the appropriate Project name, Mission, Operational Mode, and the Workstation ID.

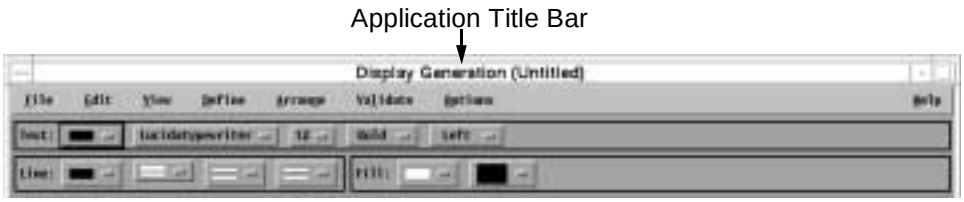

Figure 2-11. Typical application title bar

Menu Bar

HOSC applications are grouped such that all related applications have an assigned color. This assigned color is used on the menu bar of application main windows and on all associated dialog boxes. Using color in this way permits windows and dialog boxes that are part of a single application group to be easily distinguished from those of another.

Application menu bars include as a minimum **File**, **View** and **Help** menus (see Figure 2-12. Menu bar, status bar, and control panel, for the location of the menu bar).

Control Panel and Status Bar

The control panel and the status bar are optional features on application main windows, depending on the specific application you are using (see Figure 2-12. Menu bar, status bar, and control panel, for the location of control panels and status bars on application main windows). If the control panel and status bar are available, you can elect to either hide or show them using the **Hide Control Panel** and **Show Control Panel** and **Hide Status Bar** and **Show Status Bar** menu items available under the application's **View** menu. The hide/show menu items for both the control panel and status bar toggle depending on whether they are currently hidden or not. For example, if the control panel is showing, then the menu item available under **View** is **Hide Control Panel**. If the control panel is hidden, the menu item will say **Show Control Panel**. For information about a particular application's control panel or status bar, see that application's user guide.

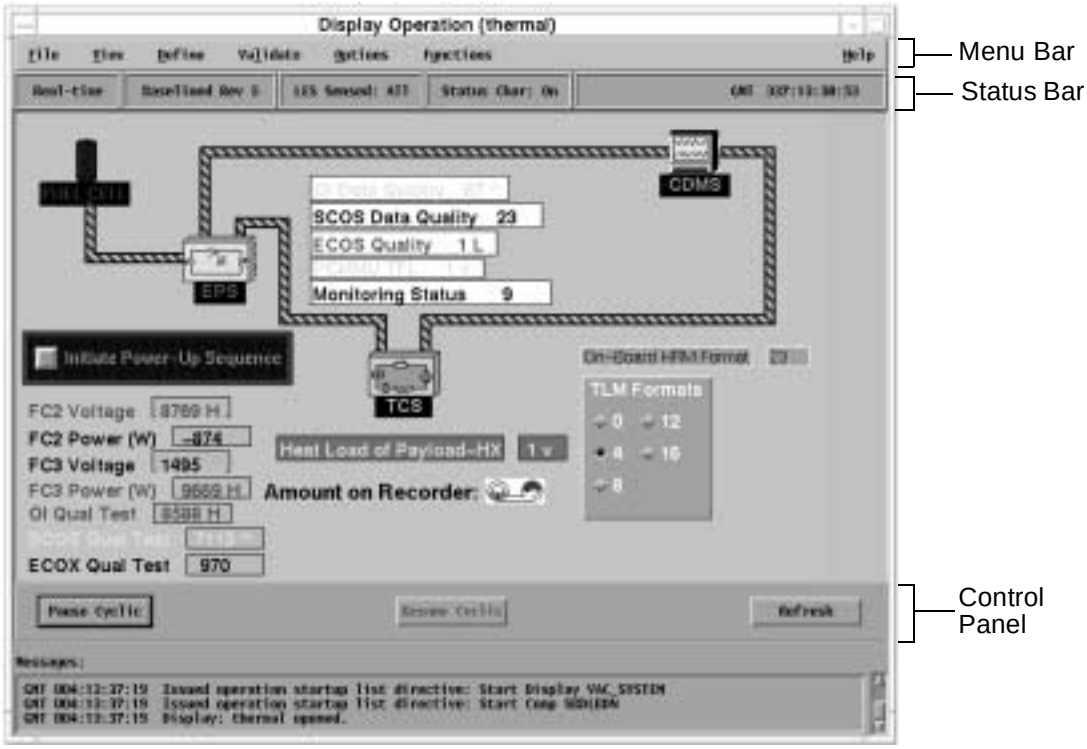

Figure 2-12. Menu bar, status bar, and control panel

Note: If an application has a control panel or status bar, they will be shown upon system initialization. If you wish to hide the control panel or status bar, you must initiate the hide function. During a single session you only have to hide the control panel the first time the application is invoked. The control panel will remain hidden until you elect to show it or until you exit the system. While the control panel is hidden, functions available through pushbuttons on the control panel can be performed through the application's menu items. If you wish to hide the status bar, however, you must do so each time the application is invoked.

Work Area

The work area is that area within a window where application-specific information is displayed and functions are performed. The work area may include a variety of graphic and text elements. These elements may require that you enter information or it may be that you only need to monitor these elements and interpret information being presented (see Figure 2-13. Work area and message area, for the location of application work areas).

Figure 2-13. Work area and message area

Message Area

Each application's message area displays status or error messages originating from the application. The number of lines shown in the message area can be set using the **Setup Message Area...** menu item available under the **View** menu. The default number of lines displayed is three, but this number can be incremented up to 50. You use the vertical scroll bar to display older messages.

Messages may be removed from the message area by selecting **Clear Messages** under the **View** menu.

Each message displayed in the message area has a time associated with it so that you can tell when specific events occurred. This time can be displayed in either Greenwich Mean Time (GMT) or Mission Elapsed Time (MET). The **Set Time Reference...** menu item can be used to toggle time references between GMT and MET.

Window Operations

Resizing Windows

When the mouse pointer is positioned over a window border (or an object that can be resized), it changes shape to indicate that the system is prepared to resize the window in the direction indicated

by the arrows. Figure 2-14. Resize border pointer shapes, shows the eight different pointer shapes that can be assumed when the pointer is positioned over a resize border. From the top and bottom resize borders a window can only be resized up or down. From the left and right window borders a window can only be resized left or right. From the corners a window can be resized in two directions (up/down or left/right) simultaneously. Resizing does not reduce or enlarge elements contained within a window, it simply changes the size of the work area.

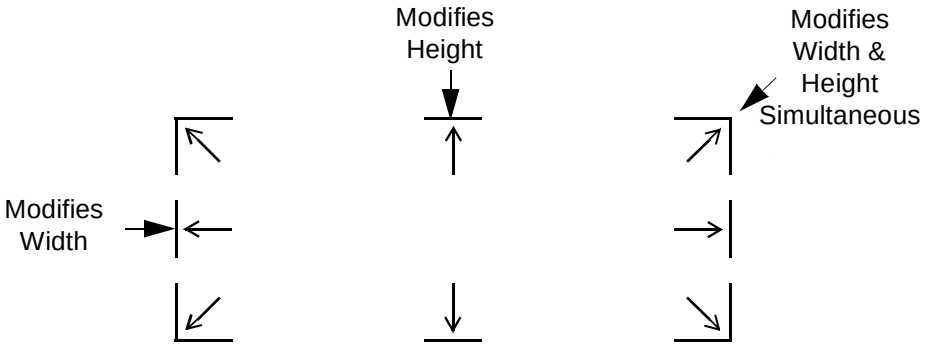

Figure 2-14. Resize border pointer shapes

Moving Windows on Your Desktop

The application title bar is used to move windows (application main windows, mini-application main windows, and dialog boxes) to new locations on your desktop. This is accomplished by positioning the mouse pointer over the application title bar of the window you wish to move and pressing the left mouse button. While holding the left mouse button down, drag the window to the desired location and release the mouse button.

Window Menu Overview

The window menu is sometimes called the system menu or control menu (see Figure 2-15. Launchpad window menu.). It is displayed when you click once on the “dash” button located at the top left corner of all windows and dialog boxes.

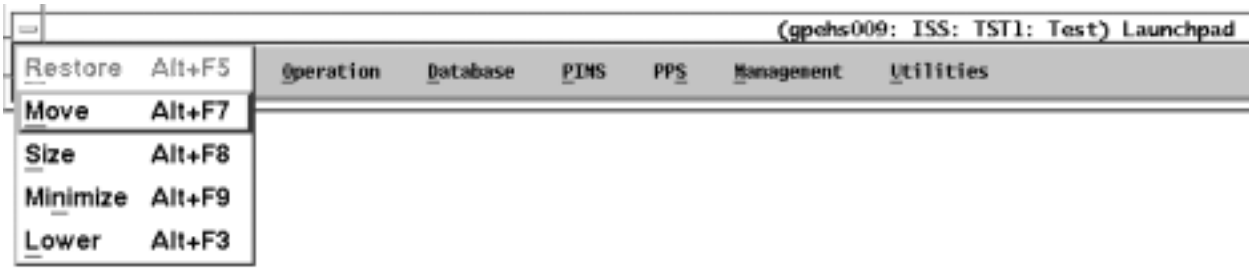

Figure 2-15. Launchpad window menu.

The items available under the various window menus include **Restore**, **Move**, **Size**, **Minimize**, **Maximize**, **Lower** and **Close**.

Tip: The window menu button has an associated expert action. If you double click rapidly on the window menu button, the application will close. This is not the recommended way to quit an application. Use **E<u>x</u>it** under the **<u>F</u>ile** menu to quit HOSC applications.

Tip: An iconified application has an associated expert action which permits you to double-click on the icon to restore it to the size it was prior to being iconified.

Minimize Button

The next window element is the minimize button (see Figure 2-16. Minimize button, maximize button, and iconified applications). This is used to shrink a window to its icon representation. The system places icons out of the way at the bottom left corner of the screen, or if setup within **<u>W</u>orkstation Preferences**, in the icon box. Click with the left mouse button on the minimize button to execute the minimize function. When this has been performed, the window is described as "iconified" (see Figure 2-16. Minimize button, maximize button, and iconified applications).

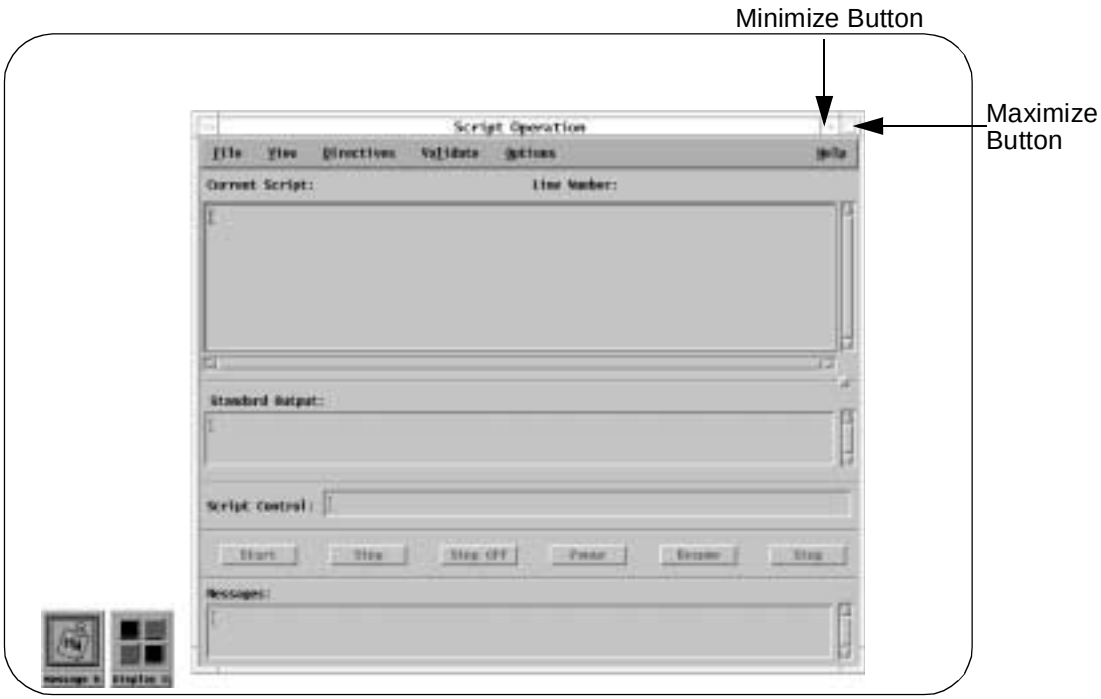

Figure 2-16. Minimize button, maximize button, and iconified applications

Tip: To return an icon to its original "window" state, select **<u>R</u>estore** from the window menu, use the restore keyboard accelerator, or perform the expert action of double-clicking on the icon.

Maximize Button

Clicking with the left mouse button on the maximize button enlarges the window so that it covers the entire desktop (screen) or is shown at its largest size.

To see the location of the maximize button, refer to Figure 2-16. Minimize button, maximize button, and iconified applications. See Figure 2-17. Maximized application window, for an example of what a maximized window looks like.

Tip: To return an icon to its original "window" state, select **Restore** from the window menu or use the restore keyboard accelerator.

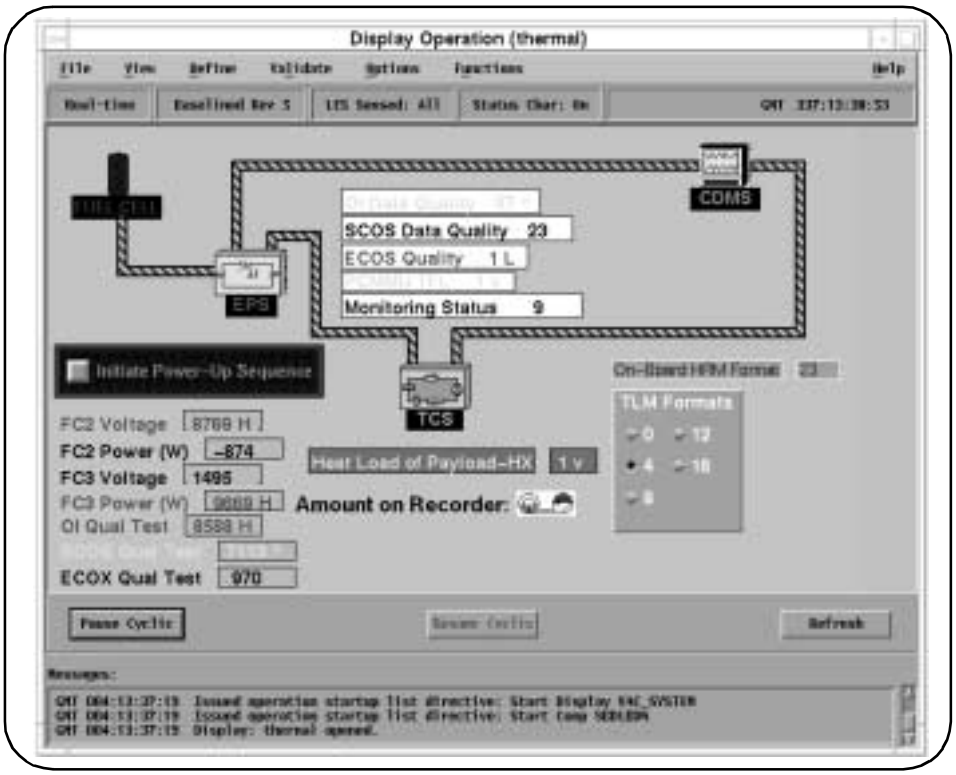

Figure 2-17. Maximized application window

Scroll Bars

Whenever there's not enough room within a window or dialog box to display its entire contents, scroll bars are usually provided (see Figure 2-18. The scroll bar is comprised of arrows and a slider box). Scroll bars provide the means to display the contents of a window area without you having to resize the window. Scroll bars have an arrow at each end and a slider box. Scroll bars may be used to scroll areas either up and down and/or left and right. The slider box shows the relative position of the area currently being viewed.

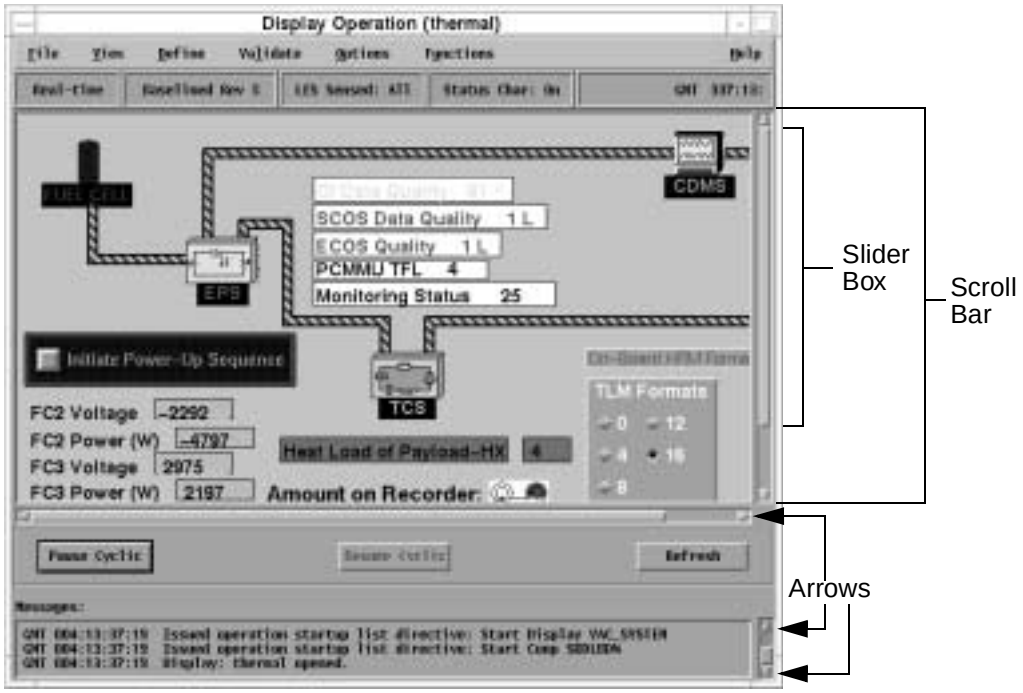

Figure 2-18. The scroll bar is comprised of arrows and a slider box

You can use scroll bars three ways:

1. You can hold the left mouse button down while the mouse pointer is on one of the arrows. The area displayed will scroll the direction of the arrow.

2. You can position the mouse pointer on the slider box, hold down the left button, and drag the box along the slider. The area displayed will scroll the direction and extent to which you move the slider box.

3. You can click the mouse within a vacant portion of the scroll bar (not on the slider box). The area displayed and the slider box will incrementally move the direction you click.

Note: As you use the scroll bar arrows to adjust the information displayed within the window or dialog box, the slider box moves to show your relative location across the entire expanse of information. If the slider box extends the entire width of the scroll bar, then nothing is hidden from view.

Summary

Once the EHS software is initialized, there are five different types of windows. The Main window application serves as the “home” window for each associated application. The Database window application are similar to the main windows except that they are created using COTS products. The Mini-application windows are the same as a main application window except that they are invoked from a main window. The Dialog boxes are used to solicit additional information prior to implementing a function. The Message dialog boxes are like regular dialog boxes except that they relay information about errors or conditions impacting your work.

The EHS software contains many devices to manipulate your way in and out of applications. The accelerator (or shortcut) keys are used to immediately initiate selected keyboard functions. These keys do not require that a menu item be opened for the accelerators to work. Mnemonic keys are used on previously opened menu items to execute functions by simply entering the underlined letter. The mouse buttons can also be used to execute several different functions. The left mouse button is used to select items, the middle mouse button to move items, and the right mouse button to invoke popup menus containing frequently used functions.

Questions

Instructions

Indicate the answers for each question below. The correct answers are given immediately following the questions.

1. In the following menu item, identify the keyboard mnemonic:
   E<u>x</u>it Ctrl Q

2. In the following menu item, identify the keyboard accelerator:
   Print Set<u>u</u>p Ctrl U

3. There is a menu item on some **<u>F</u>ile** menus call **<u>N</u>ew**. Describe the series of keystrokes you would initiate to invoke this menu item.

4. What are three ways you can select multiple graphic objects?

5. What two keys are used when selecting multiple text items?

Answers

1. X is the keyboard mnemonic. To execute Exit, press Alt-F-X
2. U is the keyboard accelerator. To execute Print Setup, press Ctrl-U
3. Press Alt-F-N.
4. By using either the Shift key, a bounding box, or a menu item/dialog box.
5. Use the Shift key to select continuous items and Ctrl key to select random items.

Module 3
The Message Handler

Objectives

Upon completion of this module, you should be able to setup and save a Message Handler filter file.

Overview

The Message Handler application provides you with the capability to view messages generated by applications currently running for a particular project and mission. The Message Handler application is started when you login and cannot be exited, although it can be resized and iconified. All messages have several components describing the message including the time, the user Identification (ID), the message priority, the message type, and the source of the message. The Message Handler application reads application messages from a buffer, applies the message selection criteria, and displays or stores these messages so that you can selectively view them.

In some instances you may be required to acknowledge the receipt of messages. These critical messages will be displayed within a message dialog box as shown in Figure 3-1. Acknowledge Message dialog box.

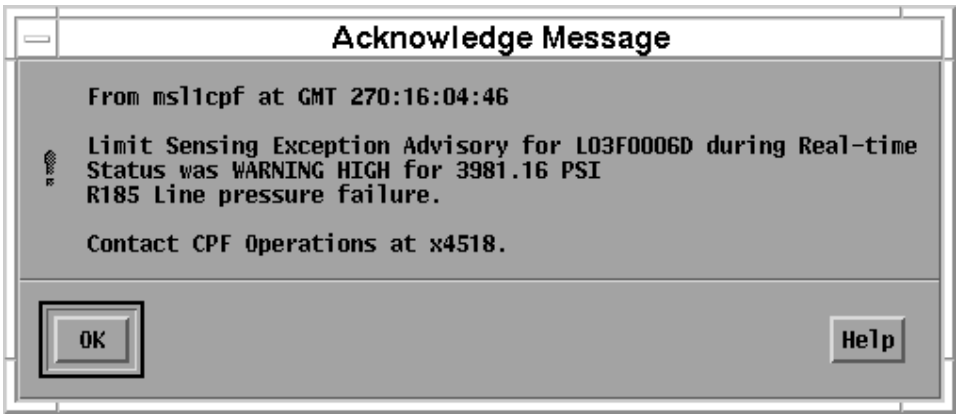

Figure 3-1. Acknowledge Message dialog box

The **Message Handler** main window allows you to view system and application messages generated by the various HOSC applications (see Figure 3-2. Message Handler main window). The Message Handler application is initially setup with a default message filter that is configured to display all types of messages.

Within the main window you can:

- Manipulate message filters so you see only those messages of particular interest
- Configure the display columns so that you only see those aspects of messages with which you are most concerned
- Pause or control the rate at which messages are displayed
- Clear the messages currently displayed

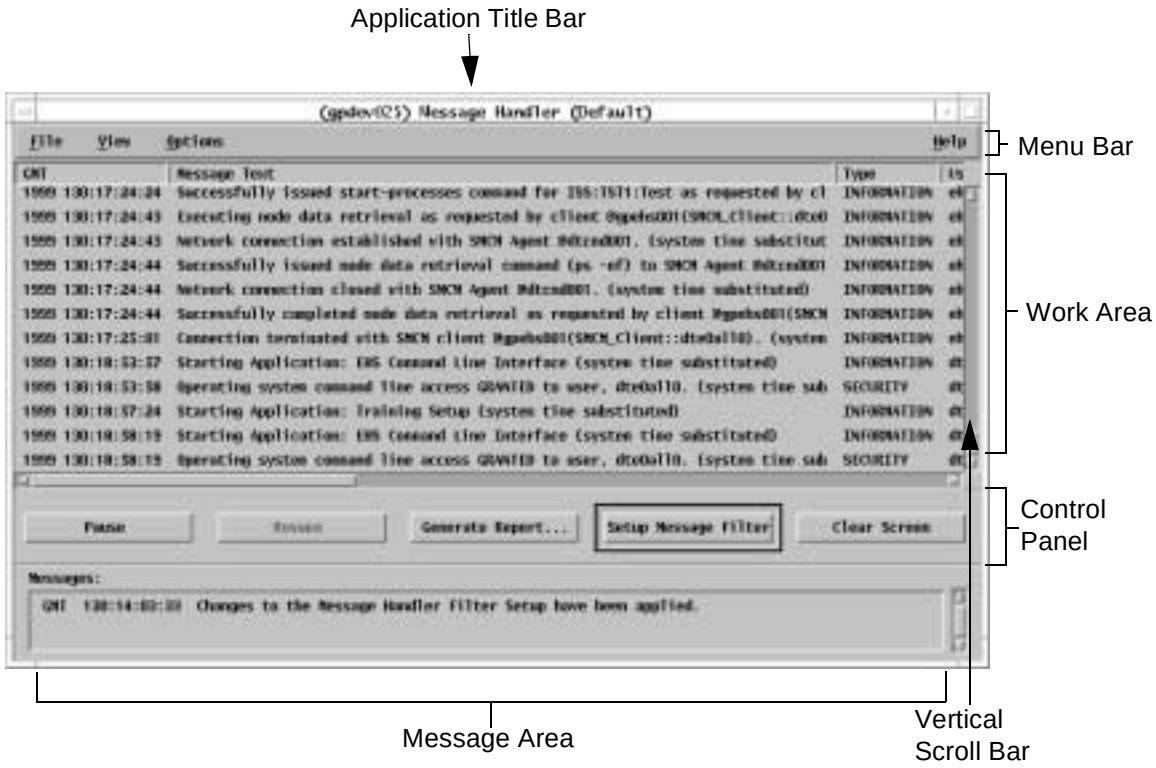

Figure 3-2. Message Handler main window

Work Area

The work area (sometimes referred to as the client area) is where the Enhanced HOSC System (EHS) system level messages and information about each message are displayed. Once the work area is filled, it will scroll to permit additional messages to be displayed. Use the vertical scroll bar to move the slider up so you can see older messages. Messages are displayed in chronological order with the most recent message being placed at the bottom of the list.

Information about each message is available in user-selectable columns. If you elect to display multiple columns (the system default shows all columns) within the **Message Handler** work area, it may result in some of the columns being hidden from view. In this case, a horizontal scroll bar will be provided so that you can scroll across the work area to see all columns of information. You can also resize the window to see more columns.

GMT column

This column identifies the time in Greenwich Mean Time (GMT) format that each message was logged to Message Handler.

Message Text column

This column displays the actual message that was logged.

Type column

This column identifies the type of message that was logged. These types include advisory messages, information messages, error messages, warning messages, exception monitoring messages, and project exception monitoring messages.

User ID column

This column identifies the user, whose messages are being logged to Message Handler.

Priority column

This column displays the message priority. Priorities are integer values from 1 to 9, with 9 being the highest priority and 1 being the lowest.

Application Group column

This column identifies the group from which application messages originate.

Application column

This column identifies the application that generated each message.

Function Name column

This column identifies the specific function within the application that issued the message. This helps to specifically isolate application anomalies.

Process ID column

This column identifies the process that generated the message. This information is helpful in the event you need to kill a process using the Process Manager application from the Launchpad. Processes are referenced by their process ID.

Platform column

This column identifies the workstation that issued the message.

Data Mode column

This column identifies the data mode of each application submitting messages to Message Handler. The data modes available are: **All**, **Real-time**, **Playback 1 - 11**, **Dump 1 - 3**, and **Mode-independent**.

Code column

This column identifies the code for each message being submitted to Message Handler.

MET column

This column identifies the time in Mission Elapsed Time (MET) format that each message was logged to Message Handler.

Actual Time column

This column displays the GMT time of when the message occurred. The actual time displayed is independent of any simulation time being used.

Operational column

This column identifies the operational mode in which the application was running when the message was generated.

Destination column

This column identifies the destination for the message. There are nine destination codes:

0 - Local - Message distributed to your local node

1 - MOP - Message distributed to all nodes defined in a specific Mission, Operational mode and Project (MOP)

2 - Subnet - Message distributed to all nodes in a subnet

3 - All - Message distributed to all available EHS nodes

10 - Local - Message received by your local node

11 - MOP - Message received by all nodes defined in a specific MOP

12 - Subnet - Message received by all nodes in a subnet

13 - All - Message received by all available EHS nodes

14 - Central - Message exceeded System Monitor and Control (SMAC) central server priority threshold

Project column

This column identifies the project being supported.

Mission column

This column identifies the mission being supported.

Exercise

Instructions

Setup and save a Message Handler filter file so that only your User ID messages are displayed within the Message Handler application.

Why?

The Message Handler application is initially setup with a default message filter that is configured to display all types of messages. In this exercise you will become familiar with configuring the Message Handler application to display only those types of messages you are concerned with. You will also learn to save these preferences to a Message Handler filter file. The Message Handler filter file is a User-generated Data Element (UDE) that can be stored to the UDE Database and retrieved for your use again during future login sessions, thus eliminating the need to reset your personal preferences.

Try It...

1. Click Setup Message Filter on the control panel of the **Message Handler** main window to invoke the Setup Message Filter mini-application.

2. Within the **List Builder** frame, select the **List** radio button beside the **User IDs:** field and click Edit to invoke the **Edit User ID List** dialog box.

3. From the **User IDs Available:** list, select your user ID. Click the **Add** arrow button to move the item to the **User IDs** list.

4. Make sure that **Included:** is selected on the **User IDs** option menu button and click OK at the bottom of the dialog box.

5. From the **Setup Message Filter** main window, click on the **File** menu and select the **Save** menu item to invoke the **Save As** dialog box.

6. Enter the name **filter1** into the **Save:** input text field and click [Save].

7. Click [Apply] on the control panel of the **Setup Message Filter** main window to apply this filter file to the Message Handler application.

Note: The name of the new filter file you applied will appear on the title bar of the **Message Handler** application. This filter will only apply to new messages and not to ones previously received.

Exercise

Instructions

Configure the columns of the **Message Handler** main window so that the **MET** column appears on the left of the **GMT** column.

Why?

The Message Handler application is initially setup containing all columns. You must use the scroll bar at the bottom of the **Message Handler** work area in order to view some of the columns. In this exercise, you will become familiar with configuring the columns so that the columns you are most interested in will be displayed without using the scroll bar.

Try It...

1. From the **Setup Message Filter** main window, select **MET** from the **Columns Visible:** list within the **Configure Columns** frame.

2. Click the **Shuffle** [△] up arrow button until **MET** is moved to the top of the list.

3. Select the **File** menu and then the **Save** menu item to save this change to the **filter1** file.

4. Click [Apply] on the control panel to apply this filter file to the **Message Handler** application.

5. Select the **File** menu and then the **Close** menu item to exit the Setup Message Filter mini-application.

Summary

The Message Handler application provides you with the capability to view messages generated by applications currently running for a particular project and mission. The Message Handler application is started when you login and cannot be exited, although it can be resized and iconified. All messages have several components describing the message including the time, the user Identification (ID), the message priority, the message type, and the source of the message. The Message Handler application reads application messages from a buffer, applies the message selection criteria, and displays or stores these messages so that you can selectively view them.

Questions

Instructions

Indicate the answers for each question below. The correct answers are given immediately following the questions.

1. The **Message Handler** main window allows you to view what general categories of messages?

2. True or False. By default, the Message Handler is setup to display only error messages.

3. Name four things you can do to configure the Message Handler.

Answers

1. System and application messages.

2. False. Default is to display all message types.

3. Filter messages to see only those of interest to you.
   Configure the display columns to display only information you want to see and in what order you want to view it.
   Automatically pause the displaying of messages after a selected number has been received.
   Clear the messages currently displayed.

Module 4
Launchpad File Menu Applications

Objectives

Upon the completion of this module, you should be able to:

- Retrieve files from the UDE Database
- Perform routine file maintenance functions
- Store files to the UDE Database
- Perform various types of print functions

The **File** menu includes those applications associated with workstation file manipulations such as opening, storing, printing, etc. (see Figure 4-1. Launchpad File menu)

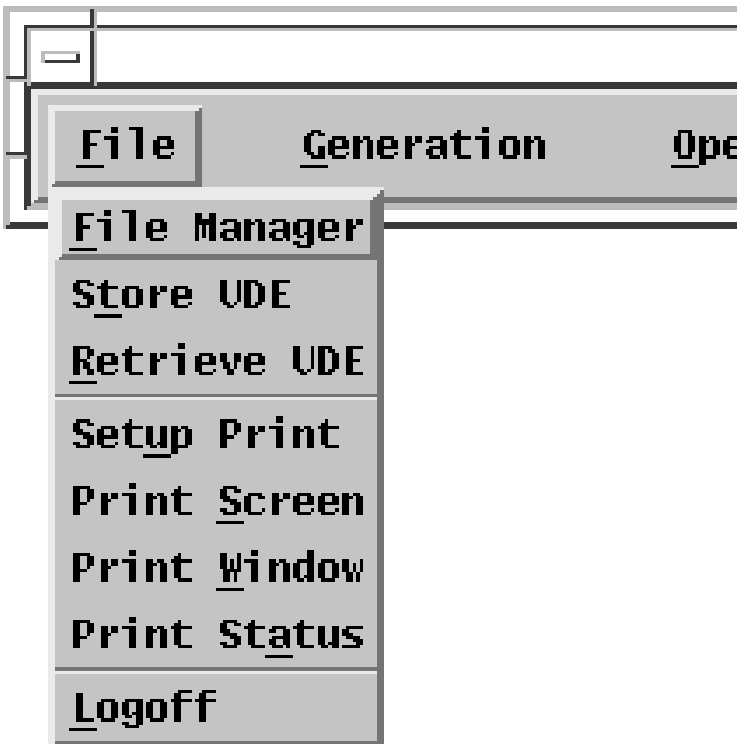

Figure 4-1. Launchpad File menu

Help: For detailed information about each of the applications under the **File** menu, see Using the HOSC File and Utilities Software (HOSC-EHS-1134).

Note: In most cases, each application is covered in the same order it is listed on the menu. Since files (User-Generated Data Elements (UDEs)) must be available on your workstation in order for you to be able to perform many of the file management applications, the Retrieve UDE application will be discussed first which enables you to move the required files to your workstation.

Retrieve UDE

The **Retrieve UDE** application allows you to request that UDEs be retrieved from the UDE database to your local workstation. You can retrieve UDEs that you created or any UDEs marked as sharable within the same project and mission. When the UDE is retrieved, a copy of the UDE is transferred to your local workstation.

Help: See "Appendix A UDE Types" for a complete listing of the types of UDEs used within the HOSC applications.

Exercise

Instructions

Retrieve several UDE files types from the UDE Database to your local workstation.

Why?

Any product you create using the EHS software becomes a UDE and can be stored to and retrieved from the UDE Database. It will then be available to you (and other users if you desire) during future login sessions using any EHS workstation. In this exercise, you will become familiar with retrieving different types of UDEs from the UDE Database to your local workstation.

Try It...

1. Click on the **File** menu on the **Launchpad**.
2. Click on **Retrieve UDE**.
3. Within the **Retrieve Mode** frame, click on the **Retrieve Selected** radio button.
4. From the **UDE Types:** list, select the **Display** UDE file type.
5. Click on **Show Shareable By User ID** radio button, leave the * wildcard in the input text field, and click **Filter**.
6. Select UDE files from the **Files** list. (You can select any files you desire for the purpose of this exercise).
7. Select **Retrieve...** from the **Options** menu,

   OR

At the keyboard type Ctrl , B

OR

Click on Retrieve... to display the **Retrieve UDE** dialog box.

8. On the **Retrieve UDE** dialog box:

   Click Retrieve - Overwrite Existing to copy the UDE to your workstation and replace any file with the same name and UDE type.

   OR

   Click Retrieve - Confirm Existing to copy the UDE to your workstation and alert you with a confirmation dialog box if a file with the same name and UDE type already exists on your workstation.

9. Perform previous steps 4-7 to retrieve **Script Source**, **Computation MSID Input**, and **Computation MSID Output** UDE types.

File Manager

The File Manager application allows you to perform routine file maintenance functions like copy, rename, delete, etc., for files located on your workstation. You can use this application to view User-generated Data Element (UDE) filenames, dates, and sizes for UDEs residing on your workstation.

Exercise

Instructions	Make a copy of an available display and save the copy as "mydisplay".
Why?	Becoming familiar with the File Manager application can be an asset to you when creating UDEs. Many times it will be easier to begin with a copy of an existing UDE than starting from scratch. In this exercise, you will become familiar with making a copy of a Display UDE type. The new copy will be renamed, creating a new version for you to work with, while leaving the original file intact.

Try it...

1. Click on the **File** menu on the **Launchpad**.

2. Click on **File Manager**.

3. Select **Display** from the **File Types**: list.

4. Select a display name from the **Files**: list.

5. Select **Copy...** from the **Options** menu,

   OR

   At the keyboard type Ctrl + C,

   OR

   Click on Copy... oke the **Copy** dialog box.

6. Type the name for the new file: "mydisplay" in the **Name of Copy:** input text field.

7. Click Copy,

   OR

   Press Enter.

Store UDE

The Store UDE application allows you to copy UDEs from your local workstation to the UDE database. Since workstations may be reconfigured between activities, this function allows you to store UDEs so that they will be available to you during a later activity. When the UDE is stored, a copy of the UDE is transferred to the UDE Database.

Note: The Store UDE function provides you with a means to backup files from your workstation.

Exercise

Instructions	Store a Display UDE type from your local workstation to the UDE database.
Why?	When you create a UDE, it is stored on your local workstation and may not be available to you during future login sessions. The Store UDE application provides you with the means to save a permanent copy of your UDE and make it available to other users if you desire. In this exercise, you will practice storing a Display UDE type from your local workstation to the UDE Database.

Note: You will learn about making UDEs available to other users in the Databases Applications training course, HOSC-2050.

Try It...

1. Click on the **File** menu on the **Launchpad**.
2. Click on **Store UDE.**
3. Within the **Store Mode** frame, click on the **Store Selected** radio button.
4. Select **Display** from the **UDE Types**: list.
5. Select the desired display names from the **Files**: list.
6. Select **Store...** from the **Options** menu,

   OR

   At the keyboard type Ctrl , T

   OR

   Click Store... .

   Note: You will have to wait a few minutes while the store process completes.

Print Applications

The following HOSC print applications are similar to those available on other commercial software packages.

Setup Print

The Setup Print application allows you to set print options which apply to the Print Screen and Print Window applications. You can specify a printer, set the paper orientation to portrait or landscape, and set the paper size to letter (standard 8.5in. x 11in.) or legal (8.5in. x 14in.).

Note: Setup Print choices only affect the Print Screen and Print Window applications. When using other EHS applications, use the **Setup Print...** menu item available from the **File** menu of that particular application.

Print Screen

The Print Screen application allows you to send the information displayed on the monitor's screen to either a printer or a file.

Print Window

The Print Window application allows you to send the information displayed in a selected window to either a printer or a file.

Print Status

The Print Status application allows you to check the status of the print queue for a given printer. Print status information includes the file name, order in the queue, owner, job number, and total size.

Exercise

Instructions

Open several windows on your workstation desktop. Use the Print Status application to find printer names at your location. Use the Setup Print application to setup your print choices. Print what is displayed on your workstation screen using the Print Screen application. Monitor the printing status using the Print Status application.

Why?

You will normally use the print function available from within the application you are using for printing. The print functions available from the Launchpad differ by allowing you to print what is displayed on your entire workstation screen (several windows at once) or a window which does not contain a print function (such as a dialog box).

Try It...

1. Begin by opening several windows on your desktop.

2. To invoke the **Print Status** application, click on the **Print Status** menu item from the **File** menu on the **Launchpad**.

3. Scroll through the **Printer** list and click to highlight a printer available at your location. This is the printer you will designate for printing from the Setup Print application. Leave this application window open.

4. From the **File** menu on the **Launchpad**, click on the **Setup Print** menu item.

5. On the **Setup Print** dialog box, in the **Paper Orientation** frame, select the **Landscape** radio button.

6. Ensure that the paper size is **Letter**, that the source is **Paper Tray** and that the file is set to print to a printer.

7. Select the printer from the **Printer:** list that you highlighted earlier on the **Print Status** main window.

8. Click on Set,

   OR

   Press Enter.

9. To print what is displayed on your workstation screen, select the **Print Screen** menu item from the **File** menu of the **Launchpad**. After a moment, you will hear a beeping sound informing you the request is being sent to the print queue.

10. Return to the **Print Status** main window and click Show Print Jobs to refresh the window. Your print job should now appear in the **Print Status** area. If it doesn't, wait a moment and click again. Once the job is finished printing, it will not longer appear in the **Print Status** area when the window is refreshed.

Summary

The Launchpad File menu applications allow you to perform various file (UDE) manipulation functions. These functions are summarized in detail below.

The Retrieve UDE application allows you to download files (UDEs) from the UDE Database, while the Store UDE application allow you to save files (UDEs) to the UDE Database.

The File Manager application allows you to perform routine file maintenance functions such as copy, rename, or delete files on your workstation.

The Print functions allow you to setup the desired printer, print what is displayed on your workstation screen, print a window, and check the printer status.

Questions

Instructions

Indicate the answers for each question below. The correct answers are given immediately following the questions.

Retrieve UDE

1. What are the necessary steps to retrieve multiple UDEs?

2. What is the quickest way to retrieve every file from the UDE database?

File Manager

3. What are the necessary steps to rename a UDE?

Store UDE

4. What are the necessary steps to store multiple UDEs?

Print Applications

5. True or False. The Setup Print settings available under the File menu overrides the Setup Print settings provided in each application.

6. What are the steps necessary for printing what is displayed on your workstation screen?

7. What are the steps necessary for printing a window?

Answers

Retrieve UDE

1.

- From the Launchpad, click on File menu
- Click on Retrieve UDE
- Click on Retrieve Selected under Retrieve Mode
- Select UDE file type under the UDE Types
- Select either Show All Current User Files or Show Sharable By User ID from the User ID Filter frame
- Select the UDE files you want
- Click on the Retrieve pushbutton
- A Retrieve UDE (Confirmation Required) dialog box will appear requiring you to overwrite or confirm selections
- Confirm the retrieval via dialog box
- Click on the File menu and select Exit

2.

- From the Launchpad, click on File menu
- Click on Retrieve UDE
- Click on Retrieve All under Retrieve Mode
- Click on the Retrieve pushbutton
- A Retrieve UDE (Confirmation Required) dialog box will appear requiring you to overwrite or confirm selections
- Confirm the retrieval via dialog box
- Click on the File menu and select Exit

File Manager

3.

- From the Launchpad, click on File menu
- Click on File Manager
- Select the desired FileType
- Select the File (UDE) to be renamed
- Click on the Rename pushbutton
- Enter the new name for the file
- Click on the Rename pushbutton
- Message will be displayed stating the file has been renamed
- Click on the File menu and select Exit

Store UDE

4.

- From the Launchpad, click on File menu
- Click on Store UDE
- Click on Store Selected under Store Mode
- Select UDE file type under the UDE Types
- Select the UDE files you want to store
- Click on the Store pushbutton
- A Store UDE (Confirmation Required) dialog box will appear requiring you to overwrite or confirm selections
- Click on the File menu and select Exit

Print Applications

5. Setup Print

    - False. The application settings will override the Launchpad settings.

6. Print Screen

    - Click on File from the Launchpad
    - Click on Print Screen
    - If necessary, you can select Setup Print to choose a printer

7. Print Window

    - Click on File from the Launchpad
    - Click on Setup Print (select printer)
    - Click on Print Window (cursor changes shape)
    - Click on the Window you wish to print

Module 5
Launchpad Utilities Menu Applications

Objectives

Upon completion of this module, you should be able to:

- Demonstrate the use of COTS products - Framemaker, Spreadsheet, Electronic Mail, and Pixmap Editor
- Demonstrate transferring files from other platforms
- Login to other workstations
- View the status of a NRT playback
- View the GMT or MET clocks
- Change your password

The **Utilities** menu includes COTS software applications that have been integrated into the suite of HOSC applications. These software packages include a word processor, a spreadsheet, an electronic mail utility and a pixmap editor. This menu also includes utilities needed to set workstation attributes and to monitor your workstation's performance. Figure 5-1. Launchpad Utilities menu, shows utility applications available from the **Launchpad**. The following sections provide a brief description for each of these applications.

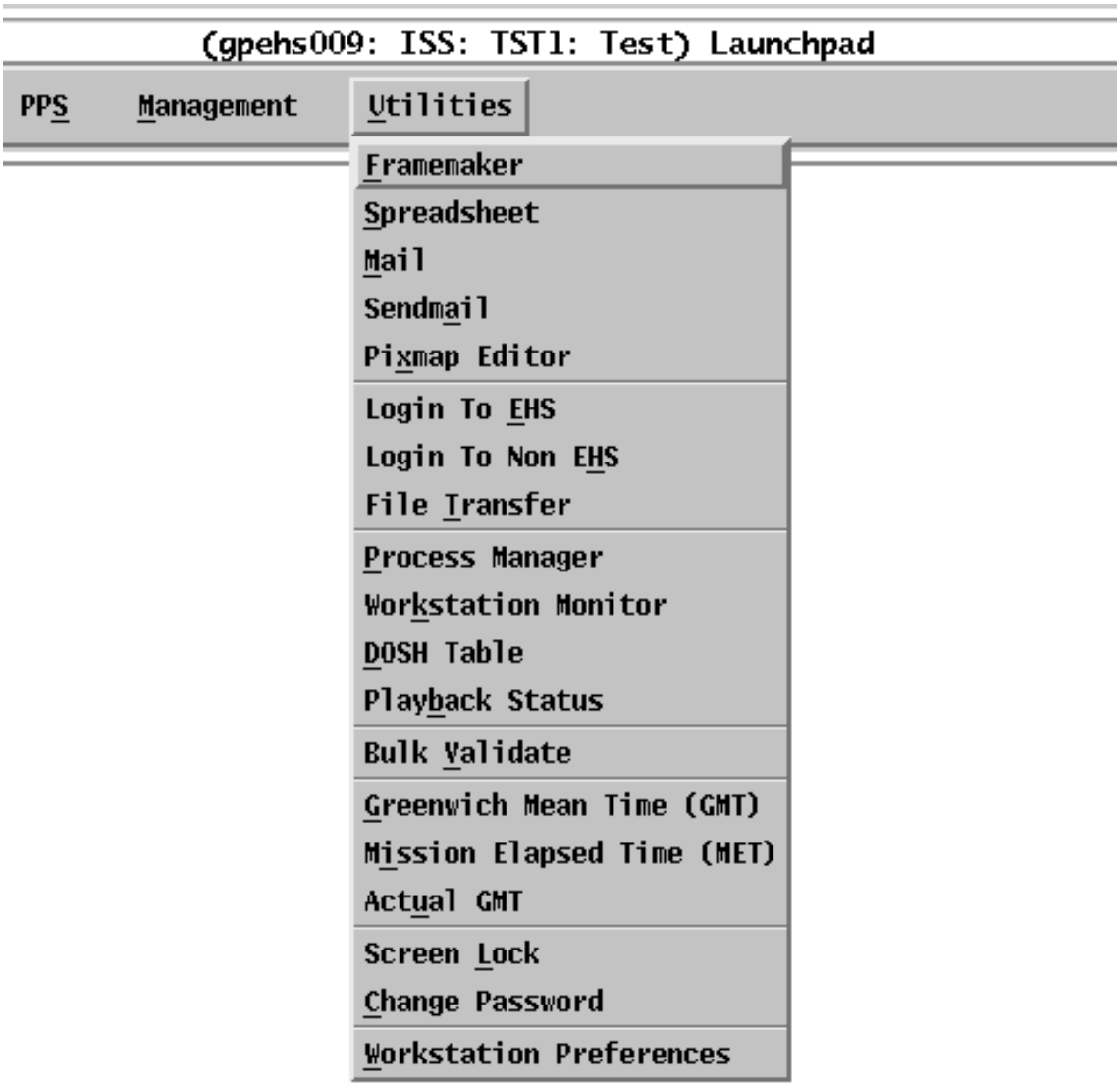

Figure 5-1. Launchpad Utilities menu

Spreadsheet

Applixware is a COTS product which provides you with spreadsheet capabilities. Applixware provides powerful numeric calculation capabilities and versatile presentation formatting, along with the ability to easily add graphics, text, and sophisticated charts to your worksheets. Applixware also provides a macro capability, which makes it easy to automate repetitive tasks or build custom applications. A NRT data file, created by the NRT Data Request application or a computation, can be analyzed in an Applixware spreadsheet.

Help: For more detailed information about the Applixware application, complete the Using Applix training course (HOSC-2110).

Mail

Mail is a COTS product which provides you with the capability to read your incoming mail.

Sendmail

Sendmail is a COTS product which provides you with the capability to create and send mail messages.

Help: For more detailed information about the Electronic Mail applications, complete the Using Electronic Mail training course (HOSC-2140).

Pixmap Editor

The Pixmap Editor is a COTS product which provides you with the capability to create and modify pixmaps. A pixmap is a bitmap (a mapping of each individual pixel) with colors. You can create pictures or images by using the drawing tools and by defining each individual pixel (point). Pixmaps can be associated with an object in a display using the Display Generation application.

Help: For more detailed information about the Pixmap Editor application, complete the Using the Pixmap Editor training course (HOSC-2170).

Login To Non EHS

The **Login to Non EHS** menu item invokes a dialog box that allows you to remotely access other Non-EHS systems.

Help: For detailed information about the **Login To Non EHS** application, see Using the HOSC File and Utilities Software (HOSC-EHS-1134).

File Transfer

The File Transfer application allows you to transfer files between platforms inside and outside the HOSC.

Help: For detailed information about the File Transfer application, see Using the HOSC File and Utilities Software (HOSC-EHS-1134).

Login To EHS

The **Login to EHS** menu item invokes a dialog box that allows you to remotely access other EHS systems.

Note: If you are a privileged user and the node is not displayed in the selection list, you can type it in the **EHS Node:** input text field.

Help: For detailed information about the **Login To EHS** application, see Using the HOSC File and Utilities Software (HOSC-EHS-1134).

Exercise

Instructions

Login to the EHS node **EHS_NDE (ndpvt001)**.

Why?

If you want to transfer a file created outside the EHS to an EHS workstation, it must first be transferred to an external quarantine area on the **EHS_NDE** server. To access the **EHS_NDE** server from your EHS workstation, you will use the **Login to EHS** application.

Try It...

1. From the Launchpad **Utilities** menu, select **Login to EHS**.
2. From the **EHS Node Login** dialog box, select **EHS_NDE** and click Login.
3. Select the project, mission, and operational mode (MOP) **(ISS:TST1:Test)** and click Login.

Note: After a few moments, you will be presented a new **Launchpad** and **Message Handler** for EHS_NDE (**ndpvt001**). Use this **Launchpad** for the next exercise.

Import/Export File

The Import/Export File application provides the capability to import or export a file from your local workstation to a remote computer outside of the HOSC and/or outside of MSFC. Files that are created on an EHS workstation will have to be transferred to a PC for use with applications such as Word, PowerPoint, etc. Workstation files must be transferred to **EHS_NDE (ndpvt001)** before being transferred to a PC. **EHS_NDE (ndpvt001)** is the Non-Operational Environment (NDE)

server that provides a central storage for workstation files and allows transferal of files to a remote computer.

EHS_NDE (ndpvt001) has an external quarantine area that can be accessed from a PC using a special port setup that allows a secure shell file transfer from **EHS_NDE (ndpvt001)** to the PC. Once the file exists in the external quarantine area, it will have to be imported to **EHS_NDE (ndpvt001)** using the **Import/Export File** application. To export files to a computer outside the HOSC, the process is reversed.

Help: For detailed information about the **Import/Export File** application, see Using the HOSC File and Utilities Software (HOSC-EHS-1134).

Exercise

Instructions

Import a file from the external quarantine area on **EHS_NDE (ndpvt001)** using the **Import/Export File** application. Store the file to the UDE Database for use on your local workstation. Logoff **EHS_NDE (ndpvt001)** and return to your local workstation **Launchpad**.

Why?

Once you have logged in to the **EHS_NDE** server, you will use the Import/Export File application to transfer the file from the external quarantine area to the **EHS_NDE** server. After the file is transferred, you will use the **Store UDE** application to copy it to the UDE Database so it can be retrieved to your local workstation.

Try It...

1. From the **EHS_NDE (ndpvt001)** Launchpad **Utilities** menu, select **Import/Export File**.

2. From the **Import/Export File** main window, under the **Local** area, click File Type: to invoke the **Select File Type** dialog box. From the **File Types:** list, scroll down and select **Word Processor** and click Select.

3. On the **Holding Area:** side, select the file **README** from the **Directories/Files:** list. Click **Import** to transfer the file from the external quarantine area.

4. Click the **File** menu and select **Exit...** to close the **Import/Export File** application.

5. From the **EHS_NDE (ndpvt001)** Launchpad **File** menu, select **Store UDE**.

6. Click the **Store Selected** radio button. Scroll down the **UDE Types:** list and select the **Word Processor** type.

7. Select the file **README** from the **Files:** list and click Store... to copy the file to the UDE Database.

8. Select **File** and **Exit...** to close the **Store UDE** application.

9. From the **EHS_NDE (ndpvt001)** Launchpad, select **Logoff** from the **File** menu to return to your local workstation **Launchpad**.

FrameMaker

FrameMaker is a COTS product which provides you with word processing and graphics creation capabilities. FrameMaker is a complete desktop publishing system, packaging together a word processor, page designer, graphics editor, and book builder. FrameMaker provides text editing, spell-checking, and search capabilities like most word processors. FrameMaker also allows you to specify a number of columns for the text and to integrate graphics within the text. Graphics objects can be created and edited or imported into the document. FrameMaker provides a book building feature that lets you manage multiple files as a single document. Tables can be included in the document with any combination of ruling lines and shading. Portrait and landscape pages can be mixed for any of the above objects. Finally, hypertext commands are available to allow you to input active links into a document.

Help: For more detailed information about the FrameMaker application, complete the Using FrameMaker training course (HOSC-2130).

Exercise

Instructions Retrieve the file that was transferred from the quarantine area and stored to the UDE Database. Display the file in FrameMaker.

Why? In order to access the file on your local workstation, you must use the Retrieve UDE application to copy it from the UDE Database. The file is a **Word Processor** type, so the FrameMaker application will be used to view the file on your EHS workstation.

Try It...

1. From your local workstation **Launchpad File** menu, select **Retrieve UDE**.

2. On the **Retrieve UDE** main window, click the **Retrieve Selected** radio button. Scroll down the **UDE Types:** list and select the **Word Processor** type.

3. Select the file **README** from the **Files:** list and click Retrieve... to retrieve the file from the UDE Database to your local workstation.

4. Select **File** and **Exit...** to close the **Retrieve UDE** application.

5. From the **Launchpad Utilities** menu, select **Framemaker**.

6. Select the **OPEN** pushbutton from the **FrameMaker** main window to invoke the **Open** dialog box.

7. Double-click the **doc** directory and select the **README** file. Click [Open], and convert the file from text.

8. Select **Close** from the **File** menu to exit the FrameMaker application.

Process Manager

The Process Manager application allows you to monitor and control currently running processes on your local workstation.

Help: For detailed information about the Process Manager application, see Using the HOSC Process Manager Software (HOSC-EHS-1177).

Exercises

Instructions Invoke the Display Generation application. Kill the process using the Process Manager application.

Why? On occasion, you may experience an application "hosing or locking up." The Process Manager application provides you with a function to kill the process, which avoids having to logoff the system entirely.

Try It...

1. Click the **Generation** menu on the **Launchpad** and select **Display Generation**.

2. Click the **Utilities** menu and select **Process Manager**.

3. Click [Refresh]. Look in the **Process Name** column for the process **display_gen**.

4. When you have located the process **display_gen**, use the horizontal scroll bar to scroll over to the **Process ID** column. Locate the PID assigned to the **display_gen** process.

5. From the **Command** menu, select **Kill...**

6. From the Kill dialog box, a list of the process(es) will be shown. Click Yes to kill the desired process.

Workstation Monitor

The **Workstation Monitor** menu item invokes a Commercial Off-the-Shelf (COTS) product that graphically shows usage of certain types of system resources (Figure 5-2. Workstation Monitor main window).

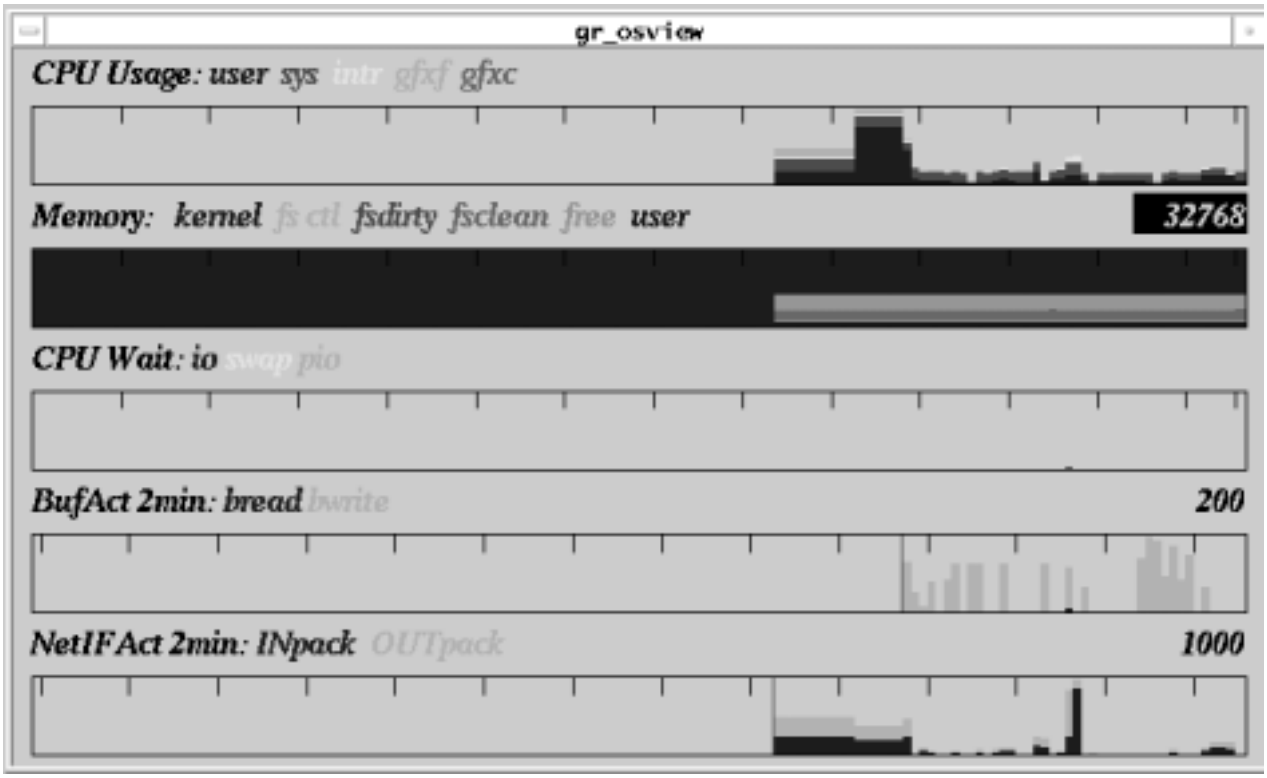

Figure 5-2. Workstation Monitor main window

This display provides a real-time window into the overall operation of the system. The main display element is a rectangular area which is filled by uniquely colored bands. Each band signifying a sampled variable measuring system performance.

Each bar in a window has a header which consists of the bar title plus the names of each variable displayed, in colors to match those used for each band in the bar.

The bars that are displayed include:

- **CPU Usage**
- **Memory**
- **CPU Wait**

- **BufAct 2 min**
- **NetIFAct2min**

The **CPU Usage:** bar statistically monitors the distribution of CPU cycles between user programs, the operating system, interrupt overhead, graphics, and idle time. It includes the following bands:

- **user** - measures your direct use of the cpu
- **sys** -measures the amount of cpu being used by the operating system
- **intr** - measures the interrupt rate in the system.
- **gfxf** - use of the cpu to display graphics (graphics input)
- **gfxc** - use of the cpu to display graphics (context switching)

The **Memory:** bar measures real memory usage. It includes the following bands:

- **kernel** - memory allocated to the operating system and drivers.
- **fs ctl** - memory used to store filesystem meta-data, that is, information such as inodes, bitmaps, directories and the like that are used to manage file data.
- **fs dirty** - memory occupied by modified file system pages which have not yet been written to backing store.
- **fs clean** - memory occupied by unmodified file system pages which are currently attached to file system buffer headers.
- **free** - memory not currently in use.
- **user** - memory currently allocated to running processes

The **CPU Wait:** bar monitors the percentage of time that the system is idle due to waiting for outstanding I/O requests. It includes the following bands:

- **io** - refers to time spent waiting for traffic related to file system accesses (including local, remote, and mapped files, and normal file read and write).
- **swap** - refers to time spent waiting for paging and swapping operations to and from any swap devices.
- **pio** - refers to time spent waiting for physical IO to complete; for example, direct DMA to user space.

The **BufAct2min:** bar monitors the input/output activity to block devices. Block devices are usually those which hold filesystems, thus the bar measures filesystem throughput. It includes the following bands:

- **bread** - blocks read
- **bwrite** - blocks written

The values are given in blocks per second, each block being 512 bytes in length. If displayed as a numeric bar, then the logical read and write rates as well as the actual read and write rates, are displayed, as well as the hit ratio of logical to actual reads and writes and the rate at which delayed writes are cancelled (due, for example, to truncation requests).

The **NetIFAct2min:** bar measures packet throughput for the IP network protocol. It includes the following bands:

- **INpack** - number of incoming packets
- **OUTpack** - number of outgoing packets

DOSH Table

The **DOSH** (Database Operational Support History) **Table** menu item invokes a dialog box that contains a history of recommended Project Telemetry Databases to be used when selecting a database for processing stored telemetry data (see Figure 5-3. DOSH Table main window). For example, you may look at the DOSH table to determine which database to use for a specific time slice when validating a NRT data request.

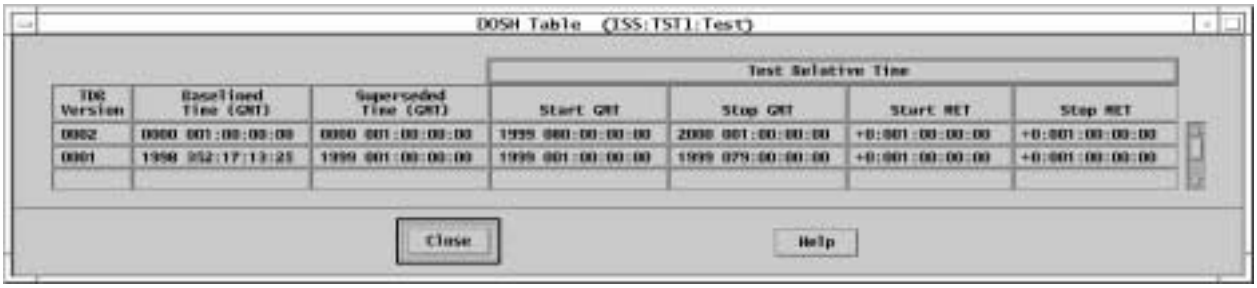

Figure 5-3. DOSH Table main window

The table contains seven columns:

- **TDB Version**
- **Baseline Time (GMT)**
- **Superseded Time (GMT)**
- **Start GMT**
- **Stop GMT**
- **Start MET**
- **Stop MET**

The first three columns (**TDB Version**, **Baseline Time**, **Superseded Time**) can be filled in by the System Monitor and Control (SMAC) application or all values may be entered by a member of the Integrated Support Team (IST).

The last four columns are labeled with *Operational Mode* **Relative Time**, where *Operational Mode* is the operational mode of the MOP (Mission Operational Mode and Project). For example, if the *Operational Mode* is **Sim**, then the column heading would be **Sim Relative Time**. The Relative Times show the GMT and MET time slices which correspond to the Baselined and Superseded times if the time is being simulated and not the actual time.

Playback Status

The Playback Status application provides you with the list of telemetry playback channels currently available in the EHS. The application provides status for each playback channel, such as the source of the playback, the telemetry packets available on the channel, the time the playback was started, and the amount of time remaining for the playback.

Help: For detailed information about the Playback Status application, see Using the HOSC File and Utilities Software (HOSC-EHS-1134).

Bulk Validate

The Bulk Validate application allows you to validate all of the UDEs on your local workstation that require validation. There are two types of validate functions that can be performed from the Bulk Validate application: Check For UDEs and Validate All. You can perform only one validation function at a time. The results of the validate function are displayed using the View Validation Report function.

Help: For detailed information about the Bulk Validate application, see Using the HOSC File and Utilities Software (HOSC-EHS-1134).

Exercises

Instructions	Use the Bulk Validate application to validate all the displays residing on your workstation. View the validation results.
Why?	Becoming familiar with the Bulk Validate application can be time saving for you. If you have created a substantial number of UDEs, it will take less time to validate them using the Bulk Validate application than validating from within the specific application.
Try it...	1. Invoke the Bulk Validate application from the **Utilities** menu on the **Launchpad**. 2. You need to validate the displays that are resident on your workstation. If no displays are available, download several from the **Retrieve UDE** application under the **File** menu. 3. Click on the **Validate Selected** radio button. 4. Click on **Display** from the **UDE Types:** list.

5. Select all displays listed in the **Files:** frame and click Validate...

6. When the dialog box is invoked, click Validate. Once validation is complete, click View Validation Report.

Greenwich Mean Time (GMT)

The Greenwich Mean Time (GMT) application allows you to monitor time in the Greenwich Mean Time format. The time displayed within this dialog box will be configured based on the operational mode you are supporting. For example, if you are supporting a simulation, the time reflected in this dialog box will be the simulated **GMT**. If you are supporting a flight, the time reflected in the dialog box will be current **GMT**.

Help: For detailed information about the Greenwich Mean Time application, see Using the HOSC File and Utilities Software (HOSC-EHS-1134).

Exercises

Instructions Display the GMT clock.

Try It...

1. Click on the **Utilities** menu on the **Launchpad**.

2. Click on **Greenwich Mean Time (GMT)**.

Note: The clock will be displayed in the top left corner of your screen. If another clock is opened, it will be displayed directly on top of the previous clock. When this happens, you will need to move the clocks on the screen until they are displayed where you want them.

Mission Elapsed Time (MET)

The Mission Elapsed Time (MET) application allows you to monitor time in the Mission Elapsed Time format. The time displayed within this dialog box will be configured based on the operational mode you are supporting. For example, if you are supporting a simulation, the time reflected in this dialog box will be the simulated **MET**. If you are supporting a flight, the time reflected in the dialog box will be current **MET**.

Help: For detailed information about the Mission Elapsed Time application, see Using the HOSC File and Utilities Software (HOSC-EHS-1134).

Exercises

Instructions Display the MET clock.

Try It...

1. Click on the **Utilities** menu on the **Launchpad**.
2. Click on **Mission Elapsed Time (MET)**.

Actual GMT

The Actual GMT application allows you to monitor the current GMT time.

Exercise

Instructions Display the Actual GMT clock.

Try It...

1. Click on the **Utilities** menu on the **Launchpad**.
2. Click on **Actual GMT**.

Screen Lock

The Screen Lock application provides you with the capability to lock your console from further input. You are required to enter a password in order to regain access.

Exercise

Instructions Lock and unlock your screen.

Try It...

1. From the **Utilities** menu, select **Screen Lock**.
2. To reinstate the screen, click the mouse button, enter your password, and return.

Change Password

The Change Password application allows you to change your login password.

Workstation Preferences

The Workstation Preferences application allows you to customize the workstation. You can set the mouse focus policy to either implicit (a window is active if the mouse resides within the window boundaries) or explicit (a window is active when the mouse is clicked within the window boundaries). You can set the colors for active and inactive windows and you can set your mouse preferences to either left or right handed. These preferences can be set for your current session or set for always.

Exercise

Instructions Change your workstation preferences from explicit to implicit mouse focus.

Why? The Workstation Preferences application provides you with features to make using your workstation more comfortable for you. For example, you can change the mouse to function as left-handed.

Try it...

1. Click on the **Utilities** menu on the **Launchpad**.
2. Click on **Workstation Preferences**.
3. Select the **Implicit** focus policy.
4. Click Set Once.
5. Note how it changes your active window action. With Implicit, the window that you move the mouse over becomes active.
6. Select the **Use Icon Box Manager** toggle button. Click Set Once. Iconify some applications. Check the bottom left for the Icon Box Manager.

Summary

The Utilities menu applications allow you to use a variety of Commercial Off-the-Shelf (COTS) products such as: FrameMaker, Spreadsheet, Electronic Mail, and Pixmap Editor. With the File Transfer and Import/Export File Utilities, you also have the capability to transfer files from other platforms. The Login utilities allow you to access other workstations. Other applications allow you to view the status of a playback, view the GMT or MET clocks, and change your password.

Questions

Instructions

Indicate an answer for each question below. The correct answers are given immediately following the questions.

1. What is the purpose of the pixmap editor?

2. What is the application that allows you to import files from external resources?

3. What is the purpose of the Mail application?

4. You are left-handed and you want your mouse to be left-hand oriented. What application would you use to do this?

Answers

1. Pixmap Editor is used to draw objects that can be used in displays.
2. Import/Export
3. Reading mail messages.
4. Workstation preferences

Appendix A
UDE Types and Workstation Directory Structure

This Appendix contains a table identifying all User-generated Data Elements (UDE) types as they appear within various applications and dialog boxes. Depending on the UDE-type, functions within the various EHS applications may or may not be available. The applications being addressed here fall either under the Launchpad's **File** menu or the **Utilities** menu.

The Launchpad **File** menu includes the File Manager, Store UDE and Retrieve UDE applications. The Launchpad **Utilities** menu includes the Bulk Validate application and, depending on your user privileges, may include various file Import/Export applications.

The following table identifies those functions that may be performed on each of the various UDE types. The table column headings are defined as follows:

C - The UDE may be copied using the File Manager application
D - The UDE may be deleted using the File Manager application
E - The UDE file extension is shown in the File Manager application
SS - A String Search may be performed on the UDE using the File Manager application
I - The UDE may be imported from outside the EHS system using the Import/Export File application
P -The UDE may be printed using the File Manager application
R -The UDE may be renamed using the File Manager application
SR -The UDE may be stored and retrieved from the UDE database using the Store UDE and Retrieve UDE applications
X -The UDE may be exported outside the EHS system using the Import/Export File application
V -The UDE may be validated

Within this table, an "X" is placed in an individual cell to indicate that the specified characteristic or function applies.

Table A-1. UDE Types and the Applications in Which They Are Used.

UDE Types	C	D	E	SS	I	P	R	SR	X	V
CCSDS Data Packet Generator	X	X		X	X		X	X	X	

Table A-1. UDE Types and the Applications in Which They Are Used.

UDE Types	C	D	E	SS	I	P	R	SR	X	V
Command Group	X	X		X	X	X	X	X	X	X
Command GSE File	X	X		X	X	X	X	X	X	
Command Header Update Form		X		X				X	X	X
Command History		X		X		X			X	
Command Report	X	X		X	X	X	X		X	
Command Mnemonic Update Form		X		X				X	X	X
Computation Description File		X		X		X		X	X	
Computation Executable		X						X		X
Computation Include (file)	X	X		X	X	X	X	X	X	
Computation MSID Input (form)	X	X		X	X	X	X	X	X	X
Computation MSID Output (form)	X	X		X	X	X	X	X	X	X
Computation Operation Output (file)	X	X		X	X	X	X		X	
Computation Source (file)	X	X		X	X	X	X	X	X	X
Computation Subroutine	X	X		X	X	X	X	X	X	
Display	X	X		X	X		X	X	X	X
Display Report	X	X			X		X		X	
EM (Exception Monitor) Configuration (file)	X	X		X		X	X	X	X	X
HOSC Packet Data Generator (file)	X	X		X	X		X	X	X	
Local Table Change File	X	X					X	X		
Message Handler Filter	X	X			X		X	X	X	
Mission Profile (hidden file)			X							
Mission Profile ID (hidden file)			X							
MSID Data Generation Editor (file)	X	X		X	X		X	X	X	
NRT (Data) Capture Output File	X	X			X		X		X	
NRT (Data) Capture Request	X	X		X	X	X	X	X	X	X
NRT (Data) List Request	X	X		X	X	X	X	X	X	X
NRT (Data) Playback Request	X	X		X	X	X	X	X	X	X

Table A-1. UDE Types and the Applications in Which They Are Used.

UDE Types	C	D	E	SS	I	P	R	SR	X	V
NRT (Data) Snapshot Request	X	X		X	X	X	X	X	X	X
NRT Usage Request	X	X		X	X	X	X	X	X	
Pixmap	X	X	X	X	X	X	X	X	X	
Printer Output Files	X	X		X	X	X	X		X	
Screendump	X	X		X	X	X	X	X	X	
Script Source (file)	X	X		X	X	X	X	X	X	X
Serial Data Generator (file)	X	X		X	X		X	X	X	
Spreadsheet (Applix File)	X	X	X	X	X	X	X	X	X	
Standard Output (file)	X	X		X	X	X	X	X	X	
TDM Generator Database File	X	X		X			X			
Validated Script		X		X		X		X	X	
Word Processor (FrameMaker File)	X	X	X		X		X	X	X	

The following tables identify the User-generated Data Element (UDE) Types as they appear on the user interface (UI) and as they are passed between applications. UDEs that you create and save are stored under the **/ehs/usr/*mission_ID*/*user_name*** directory. The Storage Directory column identifies the storage directory for the corresponding UDE type. Table A-2 UDEs that can be stored to the UDE Database lists the UDE types may be stored to and retrieved from the UDE Database:

Table A-2 UDEs that can be stored to the UDE Database

UDE Type	Storage Directory
CCSDS Packet Data Generator	pdg
Command Group	cdg
Command GSE File	gse
Command Header Update Form	chu
Command Mnemonic Update Form	cmu
Computation Description	cdd
Computation Executable	cmp
Computation Include	cmh
Computation MSID Input	cmi

Table A-2 UDEs that can be stored to the UDE Database (Continued)

UDE Type	Storage Directory
Computation MSID Output	cmo
Computation Source	cms
Computation Subroutine	csr
Display	dsp
EM Configuration	emc
HOSC Packet Data Generator	hdg
Local Table Change File	ltc
Message Handler Filter	mhf
Mission Profile	(hidden)
Mission Profile ID	(hidden)
MSID Data Generation Editor	mdg
NRT Capture Request	ncr
NRT List Request	nlr
NRT Playback Request	npr
NRT Snapshot Request	nsr
NRT Usage Request	nur
Pixmap	xpm
Screendump	dmp
Script Source	ssc
Serial Data Generator	sdg
Spreadsheet	spr
Standard Output	sto
Validated Script	vsc
Word Processor	doc

Table A-3 UDE file types that are not displayed in the Store UDE application identifies UDE file types are not displayed in the **Store UDE** application:

Table A-3 UDE file types that are not displayed in the Store UDE application

File Type	Storage Directory
Command History	ch
Command Report	doc
Computation Operation Output	doc
Display Report	doc
NRT Capture Output	nco
Printer Output Files	pof
TDM Generator Database File	tcd

Appendix B
Message Types and Message Codes

This appendix contains a table of the valid Message Handler message types with a description and an example for each. It also contains a table listing the valid message codes for each application.

Message Category	Description	Examples
Information	Message indicating function has been performed based on action or request or a message indicating status from an application.	Display: Heat Pump has been opened
Warning	Message indicating something went wrong performing function, but can still proceed.	Proceeding with Archived Database Rev 3 not recommended for Data Mode: Playback 12.
Error	Message indicating something went wrong performing function and cannot continue.	Error forking process.
Advisory	Messages that are from the system and not from the user's processes.	MJOPS001 is being shut down in five minutes, please signoff.
EM	Messages caused by events exception monitored from the user EM. These are not messages caused by events in the EM application code or UI.	MSID: xyzmmm145 is out expected state: ON
Project EM	messages caused by events exception monitored from Project EM. These are not messages caused by events in the EM application code or UI.	MSID: xyzmmm145 exceeded low caution limit of 14
Security	Messages pertaining to security-type functions.	`Maximum number of login attempts exceeded.`

The following are the message code numbers allocated to each HOSC application. These codes may be used to filter messages displayed within the Message Handler application.

Codes	Application Type
1-9999	Common Messages
10000-19999	Command Central Process
20000-29999	Command Database Messages
30000-39999	Computation Messages
40000-49999	Change Request Configuration Manager
50000-59999	Common User Interface Messages
60000-69999	Documentation Configuration Management Messages
70000-79999	Database Change Request Messages
80000-89999	Database Monitor and Control Messages
90000-99999	Display Messages
100000-109999	Data Process Request Configuration Management
110000-119999	Exception Monitoring Messages
120000-129999	Front-End Processor Messages
130000-139999	General Purpose Utilities Messages
140000-149999	Ground Support Equipment Messages
150000-159999	Local Table Messages
160000-169999	Message Handler Application Messages
170000-179999	NRT Data Logger Messages
180000-189999	Near Real-Time Messages
210000-219999	PIMS Configuration Management Messages
230000-239999	Scripting Language Processor Messages
240000-249999	System Services Monitoring and Control Messages
250000-259999	System Services Core Services Messages
260000-269999	System Services Process Manager Messages
This column identifies message code numbers that have been allocated.	This column is provided for information purposes only and describes the application(s) associated with each code.

Codes	Application Type
270000-279999	System Services Security Messages
280000-289999	System Services User Profile Messages
290000-299999	Telemetry Database Messages
300000-309999	Telemetry Network Services Messages
310000-319999	User-Generated Data Element Messages
320000-329999	Workstation Command Processor Messages
330000-339999	EHS Data Generation Messages
340000-349999	Playback Configuration Messages
350000-359999	Payload Data System Services Messages
360000-369999	Custom Data Packet Messages
370000-379999	Operations Control Mission Software Messages
This column identifies message code numbers that have been allocated.	This column is provided for information purposes only and describes the application(s) associated with each code.

Appendix C
Abbreviations and Acronym List

A

a.k.a.	also known as
A/G	Air-to-Ground
A/M	Automatic/Manual
ACBSP	Assembly Contingency Baseband Signal Processor
ADQ	Average Data Quality
ADR	Achievable Data Rate
ADS	Audio Distribution Subsystem
AIS	Automated Information Security
AIT	Analysis Integration Team
AM	Amplitude Modulation
ANSI	American National Standards Institute
AOS	Acquisition of Signal
API	Application Programming Interface
APID	Application Process Identifier
	Application Process Interface Definition
APM	Attached Pressurized Module
APP	Approved
APT	Active Process Table
AR	Action Request

ASCII	American Standard Code for Information Interchange
ASCR	Assured Safe Crew Return
ASI	Agencia Spatiale Italiano
AST	Active Server Table
AT	Address Translation
ATM	Asynchronous Transfer Mode
ATT	Attitude

B

B&D	Boot & Diagnostics
BCD	Binary Coded Decimal
BER	Bit-Error Rate
BFS	Backup Flight System
BG	Bit-contiguous Group
BIA	Bus Interface Adapter
BIT	Built-in Test
BPDU	Bitstream Protocol Data Unit
BPSK	Binary Phase-Shift-Key
BRT	BIT Response Table
BSP	Baseband Signal Processor
BST	BIT Summary Table

C

C&C	Command and Control

C&DH	Command and Data Handling
C&T	Communications and Tracking
C&TS	Communications and Tracking System
C&W	Caution and Warning
C	Counter-dependent
C	C Programming Language
CADU	Channel Access Data Unit
CAM	Centrifuge Accomodations Module
CAP	Command Acceptance Pattern
CAR	Command Acceptance Response
CB	Control Bus
CCA	Canadian Space Agency
CCB	Configuration Control Board
CCBD	Configuration Control Board Directive
CCC	Control Center Complex
CCIR	International Radio Consultative Committee
CCP	Central Command Processor
CCR	Configuration Change Request
CCS	Command and Control Software
CCSDS	Consultative Committee for Space Data Systems
CD	Compact Disk
CDB	Command Database
CDD	Command Data Definition
	Context Dependent Decommutation

CDP	Custom Data Packet
CDQ	Current Data Quality
CEU	Control Electronics Unit
CG	Comp Generation
CGM	Computer Graphics Metafile
CHeCS	Crew Health Care Systems
Chk	Check
CI	Configuration Item
CIC	Crew-Interface Console
CLI	Command Line Interface
CM	Configuration Management
CMATS	Configuration Management Asset Tracking System
CMD	Command
CMIP	Common Management Information Protocol
CMIS	Common Management Information System
CNT	Countdown Time
CO	Comp Operation
COF	Columbus Orbital Facility
COR	Communications Outage Recorder
COTS	Commercial-Off-The-Shelf
CPS	Consolidated Planning System Counts Per Second
CPU	Central Processing Unit
CRC	Circular Redundancy Check Cyclic Redundancy Check

CRR	Command Reaction Response
CS	Communications System
CSA	Canadian Space Agency
CSC	Computer Software Component
CSCI	Computer Software Configuration Item
CSM	Command System Management
CSMAC	Communications Status Monitoring and Control
CSO	Computer Security Official
CSOC	Canadian Space Operations Center
CSS	Central Systems Services
	Command System Services
	Coarse Sun Sensor
CSU	Computer Software Unit
CUI	Common User Interface
CVCDU	Coded Virtual Channel Data Unit
CVT	Common Value Table Current Value Table

D

dB	Decibels
dBW	Decibels referenced to one Watt
DADS	Data Acquisition and Distribution Services
DAE	Data Acquisition and Extraction
DARL	Database Access Routine Library

DB	Database
DBA	Database Administrator
DBCG	Database Coordination Group
DBCR	Database Change Request
DBD	Database Developer
DBMS	Database Management System
DBS	Database Services
DC	Docking Compartment
DCM	Document Configuration Management
DCN	Document Change Notice
DCR	Database Change Request
DCRG	Distributed Control Room Graphics
DCS	Digital Cross-connect Switch
DD AP	Data Distribution Address Processor
DD NS	Data Distribution Network Server
DDQ	Data Data Quality
DDS	Data Distribution System
DDT	Display Data Table
DEMOS	Distributed Earth Model Orbiter Simulation
DES	Data Encryption Standard
DEV	Development
DG	Display Generation
DIST	Distribution
DM	Data Management

DMC	Database Monitor and Control
	Data Management Checklist
DMP	Dump
DoD	Department of Defense
DO	Display Operation
DOCR	Data Operations Control Room
DOSH	Database Operational Support History
DP	Distribute Packet
DPG	Data Packet Generator
DPU	Data Processing Unit
DQ	Data Quality
DQM	Data Quality Monitoring
DRAM	Dynamic Random Access Memory
DRF	Data Requirements Form
DS	Digital Signal
DSM	Docking & Stowage Module
DSID	Data Stream Identifier
DSN	Deep Space Network
DV	Telemetry Display Verify

E

EC	Experiment Computer
ECOMM	Early Communications (S-band)
ECR	Engineering Change Request

ECWA	Emergency, Caution, Warning, and Advisory
EDDS	Enhanced Data Distribution Switch
EDS	EMCS Data System
EEPROM	ElectricallyErasableProgrammable Read Only Memory
EF	External Facility
EGP	Exterior Gateway Protocol
EGSE	Experiment Ground Support Equipment
EHS	Enhanced HOSC System
EIA	Electronics Industries Association
ELF	Extremely Low Frequency
ELM	Experiment Logistics Module
E&M	Electrical and Mechanical
EM	Exception Monitor
EMCS	Enhanced Mission Communications System
EML	Extract MSID Library
EMU	Extravehicular Mobility Unit
EPS	Encapsulated Postscript
ERIS	EHS Remote Interface Server
ES	Expected State Experiment Section
ESA/APM	European Space Agency/Attached Pressurized Module
ESA/ATV	European Space Agency/Automated Transfer Vehicle
ESA/ERA	European Space Agency/European Robotic Arm
ESC	Engineering Support Center

EVA	Extravehicular Activity
EViDS	Enhanced Video Distribution System
EVoDS	Enhanced Voice Distribution System
EXT FACIL	External Facility

F

FCB	Functional Cargo Block
FDD	Flight Definition Data
FDDI	Fiber Distributed Data Interface
FDF	Flight Dynamics Facility
FEP	Front-End Processor
FEPSC	Front-End Processor Status and Control
FEW	Front End Workstation
FGMT	File Ground Management Tool
FIFO	First-In-First-Out
FMT	File and Memory Transfer
FOV	Field-of-View
FPTNM	Foot-Pounds to Newton-Meters
FSS	Fine Sun Sensor
FSV	Flight System Verifier
FTAM	File Transfer Access and Management
FTP	File Transfer Protocol

G

GB	Gigabyte
GCID	Ground Correlation Identification
GCMR	Ground Control Message Request
GG	Ground to Ground
GHz	Gigahertz
GKS	Graphics Kerning Standard
GMT	Greenwich Mean Time
GNC	Guidance, Navigation, and Control
GOS-2	Grade of Service
GOSIP	Government Open Systems Interconnection Profile
GP	General Purpose
GPC	General Purpose Computer
GPS	Global Positioning System
GPU	General Purpose Utilities CSCI
GR	Ground Receipt
GRT	Ground Receipt Time
GSE	Ground Support Equipment
GSFC	Goddard Space Flight Center
GTC	Ground Testing and Checkout
GTR	Ground Time Reference
GUI	Graphical User Interface
GW	Gateway CSCI

H

H/W	Hardware
HAMASE	HOSC Automated Model and Screen Editor
HAPS	HOSC Advance Planning System
HASA	HOSC Administrative Software Account
HASS	HOSC Activity Scheduling System
HCR	HOSC Change Request
HDR P/L	High Data Rate Payload
HLOG	HOSC Automated Logging System
HMCG	HOSC Management Coordination Group
HOSC	Huntsville Operations Support Center
HPGL	Hewlett Packard Graphics Language
HPR	HOSC Problem Report
HRDL	High Rate Data Link
HRDS	High Rate Data System
HRF	Human Research Facility
HSM	High Speed Mux
HSMC	Health Status Monitor and Configuration
HSR	HOSC Support Request
HTT	HOSC Training Team
HTTP	Hypertext Transfer Protocol
HTV	HOPE Transfer Vehicle
HUA	HOSC User Assistance
HViDS	HOSC Video Distribution System
HVoDS	HOSC Voice Distribution System

Hz	Hertz (formerly Cycles per Second)

I

I/O	Input/Output
IAN	Institutional Area Network
ICD	Interface Control Document
ICMP	Internet Control Message Protocol
ICWG	Interface Control Working Group
ID	Identification
IDD	Interface Description Document
IDQ	Instantaneous Data Quality
IEEE	Institute of Electrical and Electronics Engineers
I/F	Interface
IGES	Initial Graphics Exchange Standard
IGSS	International Ground System Specification
IMPS	Interim Mission Planning System
IP	Internet Protocol
IRIG	Interrange Instrumentation Group
IRIG-B	Interrange Instrumentation Group, Standard B
ISCM	Integrated Support Control and Monitoring
ISDN	Integrated Services Digital Network
ISL	Integrated Signal List
ISO	International Organization for Standardization
ISPR	International Standard Payload Rack

ISS	International Space Station
ISSCB	International Space Station Configuration Board
IST	Integrated Support Team
ITS	Integrated Truss Segment

J

JCP	JEM Control Processor
JDK	Java Development Kit
JEM	Japanese Experiment Module
JSC	Johnson Space Center

K

kbps	kilobits per second
kHz	kilohertz
KERMIT	The name of a file transfer protocol
KMTS-A	Kennedy/Marshall Transmission System side A
KMTS-B	Kennedy/Marshall Transmission System side B
KSAF	Ku-band Single Access Forward
KSAR	Ku-band Single Access Return
KSC	Kennedy Space Center

L

LAN	Local Area Network

LDP	Logical Data Path Logical Destination Processor
LDP_ID	Logical Data Path Identifier
LHC	Local Holding Clock
LES	Limit/Expected State Sensing
LOR	Line Outage Recorder
LORSP	Line Outage Recording, Storage, Playback Service
LOS	Loss of Signal
LOV	List of Values
LPS	Launch Processing System
LSB	Least Significant Bit
LSM	Legal Station Mode, Life Support Module Low Speed Mux
LSW	Least Significant Word
LTE	Local Table Edit
LTG	Local Table Generation
LTO	Local Table Operation

M

M	Multi-syllable
Mbps	Megabits per second
M_{max}	Maximum Allowable Downtime
MAS	Media Archive System
MB	Megabyte

MBF	Mission Build Facility
MCC	Mission Control Center
MCC-H	Mission Control Center - Houston
MCC-M	Mission Control Center - Moscow
MCCU	Mission Control Center Upgrade
MDB	Mission Database
MDM	Multiplexer/Demultiplexer
MEC	Medical Equipment Computer
MET	Mission Elapsed Time
MF	Maintenance Fixtures
MH	Message Handler
MHz	Megahertz
MIB	Management Information Base
MIC	Media Interface Connector
MIL-STD	Military-Standard
MIPS	Mission Integrated Planning/Replanning System
MLP	Multi-Line Phone
MMC	(APM) Mission Management Computer
MOC	Mission Operations Computer
MOL	Mission Operations Laboratory
MOP	Mission, Operational Support Mode, and Project
MPLM	Mini Pressurized Logistics Module
MPDU	Multiplexed Protocol Data Unit
MPS	Mission Planning System

ms	Milliseconds
MS	Matrix Switch
MSB	Most Significant Bit
MSFC	Marshall Space Flight Center
MSID	Measurement/Stimulus Identifier
MSL	Microgravity Science Laboratory
MSN	Mission Systems
MSO	Marshall Scheduling Office
MSS	Mission Support Services Mobile Servicing System
MSW	Most Significant Word
MTBF	Mean Time Between Failure
MTTR	Mean Time To Restore
MUPS	Momentum Unloading Propulsion System

N

NI-DDS	NASA Communications System I Data Distribution System
NII-DDS	NASA Communications System II Data Distribution System
N	Normal
NASA	National Aeronautics and Space Administration
NASCOM	NASA Communications
NASDA	National Space Development Agency of Japan
NCC	Network Control Center
NCS	Node 1 Control Software

NDE	Non-operational Development Environment
NDL	NRT Data Log
NDL	Near Real-Time Data Logger
NEMS	NASA Equipment Management System
NG	Bit Non-contiguous Group
NGT	NASA Ground Terminal
NI	NASCOM I
NISN	NASA Integrated Services Network
NIST	National Institute of Standards and Technology
NM	Network Management
NMCC	Network Management Control Center
NMS	Network Management System
NPM	Network Performance Monitoring
NPSS	NASA Packet Switching System
NRT	Near Real-Time
NRZ-L	Non-Return to Zero Level
NRZ-M	Non-Return to Zero Mark
NSOC	NASDA Space Operations Center
NSS	Network System Services
NSTS	National Space Transportation System
NTM	Net to Media
NTP	Network Time Protocol
NTSC	National Television Standards Committee
N/W	Network

O

OBT	Onboard Time
OC	Operations Control
OCC	Operations Control Center
OCDB	Operational Command Database
OCMS	Operations Control Mission Software
OCR	Operations Change Request
OD	Operational Downlink
ODA	Office Document Architecture
ODF	Operations Data File
OI	Operational Instrumentation
OIU	Orbiter Interface Unit
OOS	Onboard Operating Summary
Ops	Operations
ORU	Orbital Replacement Unit
OS	Operating System
OSF	Open Software Foundation
OSI	Open System Interconnection
OSTP	Onboard Short Term Plan
OSTPGMT	Onboard Short Term Planning Ground Management Tool
OTE	Operational Test Equipment
OTR	Onboard Time Reference

P

PAP	Payload Activity Plan
PB	Playback
PC	Polynomial Coefficient
PC	Personal Computer
PCAD	Pointing Control and Aspect Determination
PCAP	Payload Crew Activity Plan
PCDB	Project Command Database
PCM	PIMS Configuration Management Pulse Code Modulation
PCTC/UDC	Payload Crew Training Complex/Utilization Development Capability
PDAC	Procedures Development and Control
PDF	Portable Document File
PDI	Payload Data Interleaver
PDL	Payload Data Library
PDRF	Playback Data Request Form
PDSS	Payload Data System Services
PFS	Primary Flight System
PI	Prime Item Principal Investigator
PID	Process Identifier
PIMS	Payload Information Management System
P/L	Payload
PM	Pressurized Module

PMA	Pressurized Mating Adapter
PMCA	Power Management and Control Application
PN	Pseudorandom Noise
POCC	Payload Operations Control Center
POD	Payload Operations Director
POIC	Payload Operations Integration Center
PP	Point Pair
PPS	Payload Planning System
PRT	Packet Routing Table
PS	Parameter Select Pressurized Section
PSCN	Program Support Communications Network
psi	pounds per square inch
PSP	Payload Signal Process
P/SS	PDSS System Support
PSS	Project System Services
PTC	Payload Training Complex
PTDB	Project Telemetry Database
PUB	Publication
PUI	Program Unique Identifier

Q

QPSK	Quadrature Phase-Shift-Key

R

R	Range-dependent
RAM	Random Access Memory
RCS	Reaction Control System
RCU	Remote Commanding Unit
RDBMS	Relational Database Management System
RDRP	Raw Data Record Playback
ReGIS	Remote Graphics Instruction Set
REL	Released
RFE	Reference File Editor
RFI	Radio Frequency Interference
RGB	Red, Green, and Blue
RID	Review Item Discrepancy
RP	Retrieval Processor
RPM	Rounds per Minute
RPSM	Retrieval Processing Summary Message
RR	Replanning Request
R-S	Reed-Solomon
RS	Recommended Standard
RSA	Russian Space Agency
RSS	Resident Size
RT	Real-time
RT_{max}	Maximum Repair Time

RTAS	Radians to Arcsecs
RTC	RealTime Command
RTD	Radians to Degrees
RTDS	Real-time Data System
RTI	Remote Telephone Interface
RTN	Return to Normal
RTS	Requirements Tracking System
	Remote Tracking Station
RUM	Remote User Machine
RW	Reaction Wheel

S

S	Super
S/A	Sub/Address
SA	Sub Address Single Access
S&E	Science and Engineering
SC	State Code Station Crew Subsystem Computer
SCG	Special Computation Generation
SCM	Status and Configuration Manager
SCR	Strip Chart Recorder
SDS	Scripts Database Subsystem
SDT	Shuttle Data Tape

SDV	Systems Development and Verification
SEND	KERMIT directive
SER	Scientific, Engineering, and Research Systems
SGI	Silicon Graphics Indy™
	Silicon Graphics Incorporated
SGML	Standard Generalized Markup Language
SL	Spacelab
SM	Service Module System Monitor Store Manager
SMAC	System Monitor and Control
SMCM	System Monitor and Control Configuration Manager
SMTP	Simple Mail Transfer Protocol
SN	Space Network
SNMP	Simple Network Management Protocol
SOA	Science Operations Area
SOD	Shuttle Operational Downlink
SONET	Synchronous Optical Network
SOPG	Science Operation Planning Group
SPL	Scratchpad Line
SQL	Structured Query Language
SRD	Serial Receive Device
SRS	Software Requirements Specification
SS	System Services
SSA	S-band Single Access

SSAF	S-band Single Access Forward
SSAR	S-band Single Access Return
SSCC	Space Station Control Center
SSCS	Space to Space Communications System
SSCT	Send Serial Clock Timing
SSH	Secure Shell
SSGUI	Scripting Services Graphical User Interface
SSL	Secure Socket Layer
SSL3	Secure Socket Layer 3
SSME	Space Shuttle Main Engine
SSOR	Space to Space Orbiter Radio
SSS	Shared System Services
SSSR	Space to Space Station Radio
SSUP	System Services User Profile
STDN	Spaceflight Tracking and Data Network
STS	Space Transportation System
SUB	Submitted
SUT	SMAC User Team
SVF	Software Verification Facility

T

T	Typical
TAS	Test and Simulation
TBA	To Be Added

TBC	To Be Confirmed
TBD	To Be Determined
TBR	To Be Resolved
TBS	To Be Supplied
TCP/IP	Transmission Control Protocol/Internet Protocol
TDB	Telemetry Database
TDM	Time Division Multiplexer
TDRS	Tracking and Data Relay Satellite
TDRSS	Tracking and Data Relay Satellite System
TDS	Telemetry Database Subsystem
	Time Distribution System
TIFF	Tagged Image Formatted File
TLM	Telemetry
TMS	Transport Management System
TNS	Telemetry and Network Services
TNSDP	Telemetry and Network Services Distribute Packet
TPS	Telemetry Processing Services
TRW	TRW Space Park
TTL	Time To Live
TTY	Teletype

U

UAS	User Application Software
UDE	User-generated Data Element

UDLT	Universal Data Loop Transceiver
UDN	User Defined Name
UDP	User Diagram Protocol
UDSM	User Data Summary Message
UFT	Unrestricted File Transfer
UGSE	User Ground Support Equipment
UHF	Ultra High Frequency
UI	User Interface
ULC	Unpressurized Logistics Carrier
UOA	User Operations Area
UPAR	User Profile Access Routine
UPD	User Performance Data
URL	Universal Resource Locator
USGS	United States Ground Segments
USOS	United States On-Orbit Segment
UTA	User Telemetry Applications CSCI

V

VAX	Virtual Address Extension
VC	Virtual Channel
VCDU	Virtual Channel Data Unit
VCID	Virtual Channel Identifier
VMS	Virtual Memory System
VT	Video Terminal

VV	Verification and Validation

W

WCP	Workstation Command Processor
WEX	Workstation Executive
WPL	Word Processing Language
WPSPLUS	Word Processing System PLUS
WSGT	White Sands Ground Terminal
WSC	White Sands Complex

X

X Window	X Window System
XMODEM	The name of a file transfer protocol
XPDR	Transponder

Z

ZOE	Zone of Exclusion

Appendix D
Glossary

Accelerator	A sequence of keys that provides immediate access to application functions. For example, Ctrl + N to invoke the **New** menu item.
Activation Type	Method used within local table application to activate a group. The defined methods are Time and Control.
Active Window	The workstation window that has input focus and in which keyboard entries impact and may appear. See "Input Focus."
Analog	A mechanism in which data is represented by continuously variable physical quantities.
Application Main Window	The primary window of a software application.
Application Process Identifier (APID)	The APID is an 11-bit field that is included in Consultative Committee for Space Data Systems (CCSDS) headers. It uniquely identifies the vehicle that created the source packet.
Application Title Bar	The bar at the top of a main window that consists of the window menu button, the title area, and the minimize and maximize buttons.
Apply Pushbutton	A pushbutton that implements any changes made within its dialog box, but leaves the dialog box on the screen so that additional changes can be made. See "OK Pushbutton."
Approve	In PIMS, this action is taken by a reviewer to signify his/her approval that a document, change request, or data request be placed in the baselined state.
Archived Database	A telemetry database that no longer reflects the current real-time telemetry characteristic information. Only one archive database is available online at a time.
Attributes Defaults Bar	The area below the menu bar on the main window where application **Text:**, **Line:**, and **Fill:** default attributes are set.
Avtec™	A manufacturer of telemetry transmit and receive devices used in the Huntsville Operations Support Center (HOSC) Enhanced HOSC System (EHS) as the primary telemetry processing hardware devices.
Baselined	In PIMS, the final state of the review cycle. When a document, change request, or data request has been approved by all reviewers, the approver may place it in the baselined state.

Baselined Database	Database that reflects the current real-time telemetry or command characteristic information for a particular mission activity. Baselined databases have completed validation.
Bitstream Protocol Data Unit (BPDU)	A protocol data unit of the bitstream function having a format of a header followed by a fixed length block of contiguous bitstream data.
Block	NASA Communications (NASCOM) 4800-bit block format utilized for the transfer of data via the GSFC/MSFC Multiplexer/Demultiplexer (MDM) system.
Calibrated	Three types of calibration exist for telemetry samples: polynomial, point pair interpolation, and state code conversion. If calibration is requested, Telemetry and Network Services (TNS) automatically converts the unprocessed sample and then performs calibration on the sample for that Measurement/ Stimulus Identifier (MSID) as defined in the local table.
Cancel Pushbutton	A pushbutton that allows a user to exit a dialog box without implementing any changes.
Cascade Menu	A sub-menu or menu-within-a-menu that appears when you highlight a menu function that has an arrow to the right of its name. Cascade menus are used to group similar functions together beneath the pulldown menu.
Caution	A standard icon used throughout the user guide set to represent destructive actions which could result in loss of data.
Caution Limits	A range defined by a high and low value for an analog MSID in the Telemetry Database (TDB) and Local Table. A color code (yellow) represents values within those ranges in the application.
CCSDS Packet	A source packet comprised of a 6-octet, CCSDS defined primary header followed by an optional secondary header and source data which together may not exceed 65535 octets.
Channel Access Data Unit (CADU)	Protocol data unit used for transmission from the ISS to the PDSS. A CADU consists of a CVCDU that has been prefixed and delimited by a synchronization marker.
Click	The action of pressing and releasing a mouse button. Typically, this is a left mouse button action.
Coded Virtual Channel Data Unit (CVCDU)	A VCDU to which a block of error-correcting Reed Solomon (RS) check symbols has been attached.
Command System Manager	The position in charge of controlling the commanding system utilizing the Command System Managment software.
Commercial-Off-The-Shelf (COTS) Software	Software applications that have been purchased from a commercial software vendor as opposed to those that were developed internally.

Computation	A FORTRAN or C program used to manipulate telemetry parameters. These programs are created by the Computation Generation application and are executed in Computation Operation.
Configuration Management (CM) Tools	Institutional applications that allow users to access and perform tasks, such as tracking requirements and equipment, scheduling resources, and logging into automated problem report systems.
Control Indicator	Used to indicate that the group will be activated for limit/ expected state (LES) sensing with either the control MSID or a control MSID plus delay time.
Control Panel	The area of a window where application pushbuttons and other graphical components are located.
Converted	The process of translating raw telemetry data into an American National Standards Institute (ANSI) standard data representation so that the sample can be properly interpreted by the machine which processes the data.
Counter-dependent	A parameter whose occurrence in telemetry is dependent on an incrementing or decrementing counter in the data.
Critical Command	A command whose initiation and execution could possibly cause damage to a payload or spacecraft and impair the mission.
Database Administrator	An individual who is primarily responsible for managing the RDBMS engine and administering database accounts. He/she also has the privilege to edit restricted database fields in any database, but is normally not recommended to edit data values that drive the telemetry and command processing for the EHS system.
Database Coordination Group	A working group which includes representatives from the appropriate project operations personnel, project source DB developers, MOL DB developers and the HOSC validation team. Review and approve/dissaprove DBCRs, resolve conflicts and evaluate any DB related issues.
Database Developer	An individual that has the privilege to edit restricted fields (e.g., decom, etc.) for both operational and non-operational databases that drive telemetry and command processing for the EHS system.
Dataset	A saved set of a command's modifiable fields used to update a command prior to being transmitted.
Data Stream Identifier (DSID)	A field within a Secondary EHS Protocol Header for PDSS Payload Data used as a unique identifier for the data stream. This bit denotes if the type of data contained therein is CCSDS packet data (0) or BPDU (1).

Delivered Database	A database must be delivered before it can become pre-released. A delivered database has not been validated for operational testing.
Delta Limit	Maximum acceptable difference between consecutive samples of a parameter.
Desktop	The computer monitor backdrop area on which all windows are opened. May also be referred to as workspace.
Development	In PIMS, the first state of the review cycle in which a document, change request or data request is still being written or is being updated.
Direction Keys	A group of computer keyboard arrow keys which allow users to move up, down, left, and right within an application or menus.
Disapprove	In PIMS, the action taken by a reviewer to signify disapproval and recommendation against moving a document, change request or data request into the baselined state.
Discrete Values	Telemetry values that have states (e.g., on or off).
Double-click	The action of pressing and releasing a mouse button twice in rapid succession.
Drag	To press and hold down a mouse button while moving the mouse on the desktop (and the pointer on the screen). Typically, dragging is used while moving and resizing windows.
Drawing Tools Palette	A group of tool buttons that is used to create graphic objects in order to display telemetry data, initiate commands, and start scripts and computations. The palette is located on its own floating dialog box or the application window.
Dump	During periods when communications with the spacecraft are unavailable, data is recorded onboard and played back during the next period when communications resume. This data, as it is being recorded onboard, is encoded with an onboard embedded time and is referred to as dump data. When a near real-time (NRT) request is written specifying that dump data is desired, the onboard embedded time is used to fulfill the request.
Dynamic Objects	Graphical objects that represent updating telemetry data.
Ellipse	A geometric shape which can be created on a display (i.e., a plane of a cone, an oval shape, etc.).
Expected State	Text state code which indicates the nominal value of a parameter.
Expert Mouse Actions	Clicks or double-clicks of mouse buttons which are non-standard and which activate special functions.

Filter	The filter function is used within a dialog box to refine and define subsets of files you want to work with using a string search and wildcard. Characters can be used to implement the filter function.
Fonts	A style of printed text characters.
Graphical User Interface (GUI)	A way of interacting with computers using graphics-oriented software and hardware.
Grayed out	A menu selection item that has been made insensitive, which is visually shown by making the menu text gray rather than black. Items that are grayed out are not currently available.
Greenwich Mean Time (GMT)	The solar time for the meridian passing through Greenwich, England. It is used as a basis for calculating time throughout most of the world. Displayed within the HOSC, it follows the format ddd:hh:mm:ss.
Grid	A pattern of horizontal and vertical lines forming squares of uniform size on a display, used as a reference for locating points.
Group Parameter Composition	Parameter composition where the bits of a parameter are contiguous and a multiple occurrence of that parameter exists as a group of samples.
Groups	MSIDs which have been grouped together, primarily for use with the Exception Monitor (EM) application.
Hazardous Command	A command whose initiation and execution could pose a threat to human life or the entire mission.
Help	A standard icon used throughout the user guide set to indicate that a cross-reference is provided to assist in solving problems or to answer questions.
Huntsville Operations Support Center (HOSC)	A facility located at the Marshall Space Flight Center (MSFC) that provides scientists and engineers the tools necessary for monitoring, commanding, and controlling various elements of space vehicle, payload, and science experiments. Support consists of real-time operations planning and analysis, inter- and intra-center ground operations coordination, facility and data system resource planning and scheduling, data systems monitor and control operations, and data flow coordination.
I-beam Insertion Bar	A graphical image used to represent the insertion point of text in a text entry area which provides a visual cue that text entry is anticipated by the system.
Icon	A graphical representation of an object on the desktop. Objects can be minimized (iconified) to clear a cluttered workspace, and restored (opened), as needed.

Input Focus	A window or window element that is activated and available for subsequent actions. Input focus is usually indicated by highlighting or changing the color of the activated element.
Input Slider	An input object that allows users to change values of pseudo parameters and computational constants assigned to objects. Pseudos can be used in other applications (i.e., scripts, computations, etc.).
Insensitive	An object or area of an application window that does not have input focus.
Integrated Support Team (IST)	Institutional groups at the HOSC responsible for configuring, monitoring, and resolving problems with computer systems and application software.
Launchpad	A floating menu bar that is used to initiate all HOSC software applications.
Legend	A table that labels parameters plotted on a chart or grid.
Limit Delta	Maximum acceptable difference between consecutive samples of a parameter.
Limit/Expected State Sensing (LES)	A configurable option in Display Operation that allows the user to select whether he wants to see limit violation status or not. The incoming data is compared against the Local Table limits.
Limits	Defined ranges for a measurement which are used to indicate off-nominal conditions: Caution High, Caution Low, Warning High, and Warning Low.
Line Plot	A plot that uses lines to represent the relationships among telemetry values.
Local Table	A subset of the TDB stored on a workstation or server used for telemetry processing.
Maximize Button	A control button that is located to the right of the application title bar. When pressed, this button enlarges the application window to its largest state.
Menu Bar	The area at the top of a window that contains the titles of pull-down menus.
Merge	The combining of data from different sources for a specific time slice. During merge, the best (cleanest) data from each source will be used to create a contiguous segment of data for the specified time slice.
Message Area	The part of the application window where system messages/ responses are shown.
Message Dialog Box	An area that provides information, gives the current status of data, asks questions, issues warnings, or draws attention to errors.

Mini-Application	A secondary main window activated from within a main window application.
Minimize button	A control button located to the right of the application title bar. When pressed, it iconifies the window.
Mission, Operational Support Mode, and Project (MOP)	A MOP is what delineates one EHS activity from another. MOP information is available in the common configuration file on every node.
Mnemonic	An underlined character on a menu item, that allows users to initiate the item by typing letters on a keyboard. A user-friendly name used to reference a command residing in the command database.
Mode Independent	Mode Independent is used to describe any process that is not dependent on a data mode.
Modifiable Commands	Commands containing at least one data field which can be updated during operational activities prior to their uplink transmission.
Mouse	A pointing device that is used along with a keyboard in point-and-click user interfaces. The mouse used with HOSC workstations contains three mouse buttons. The left mouse button is used to activate and select items on windows. The middle mouse button is used for move functions. The right mouse button is used to access popup menus.
MSID Text Field	An output object for viewing telemetry containing a label for the telemetry parameter, as well as the current value of the parameter displayed in a specified format (i.e., decimal, hex, octal, binary, American Standard Code for Information Interchange (ASCII), etc.).
Multiple Drawing Mode	A mode that allows users to draw multiple objects of the same type.
Native Data Type	Defined in the database and indicates how the MSID data will be interpreted in the HOSC.
Nominal	A color code indicating expected conditions within defined limits of parameters.
Non-Shareable	A flag has been set to prevent other users from retrieving your User-generated Data Element (UDE) from the UDE Database and using it on their local workstations.
Normal	A telemetered parameter that occurs once per packet.
Note	A standard icon used throughout the user guide set to direct your attention to specific items of concern.
OK Pushbutton	A pushbutton that implements any changes specified within a dialog box. The dialog box is dismissed after this pushbutton has been selected.

Option Menu Button	A pushbutton which, when clicked, displays a menu of related options. The selected option is shown as the pushbutton label.
Output Slider	An object that displays telemetry parameters.
Packet	A data unit comprised of octets that a source application generates.
Parameter Composition	Describes how the bits of a parameter can be arranged in a packet for a sample(s) of that parameter.
Pixmap Object	A picture that can be drawn using the pixmap editor or scanned and assigned using the pixmap editor.
Playback	Playback data can originate either internally or from some other facility. Project servers in the HOSC receive Playback telemetry streams from the HOSC Data Distribution System (DDS) and perform the same processing as would be performed on real-time telemetry streams.
Pointer	Sometimes called the mouse cursor, the pointer shows the location of the mouse on the desktop. The pointer's shape depends on its mode. (e.g., on a window frame, the pointer is an arrowhead; while you are waiting for an action to complete, the pointer becomes clock).
Point Pair Calibration	A measurement which is calibrated using a series of linear segments. The linear segments are defined by a pair of points for each segment. Each point consists of a raw count value and a corresponding engineering unit value.
Pointer Shapes	A graphical shape that a pointer assumes in the drawing mode (e.g., cross-hairs, I-beams, hour-glasses, etc.).
Polynomial Coefficient Calibration	A measurement is calibrated using the following polynomial calibration equation: where: eu - engineering units cnts - counts eu = COEF0 + (cnts1 x COEF1) + (cnts2 x COEF2) + (cnts3 x COEF3) + (cnts4 x COEF4) + (cnts5 x COEF5) + (cnts6 x COEF6) + (cnts7 x COEF7) + (cnts8 x COEF8) + (cnts9 x COEF9).
Popup Menu	A menu that is invoked when the right mouse button is clicked. Functions available are the most common and vary from application to application.
Predefined Commands	Commands completely defined prior to an operational activity. Predefined commands contain no modifiable data fields.
Pre-released Database	A database that has been validated for operational testing. It is used to validate UDEs (displays, comps, etc.) prior to the baseline release of the database.

Project Telemetry Database	Contained within the Telemetry Database, includes the telemetry definitions needed to drive HOSC telemetry processing for a specific project/mission. The source of the real-time telemetry processing tables found in the Telemetry Local Table identified by a project/mission/revision prefix. Also included are tables to contain user copy data, an error log, and an Initial Load Table.
Protocol	**1:** Provides the formulas for passing messages, specifies the details of message formats, and describes how to handle error conditions. More importantly, it allows us to discuss communication standards independent of any particular vendor's network hardware. A communication protocol allows one to specify or understand data communication without depending on detailed knowledge of a particular vendor's network hardware. **2**: A term referring to the type of source data used in the construction of an EHS packet. EHS Packet Protocols include: "C" - CCSDS packet, "P" - pseudotelemetry packet, "T" - encapsulated TDM packet, "B" - encapsulated block packet, and "D" - TDS packets.
Pseudo MSID/Parameter	A parameter identification (ID) that has been assigned to contain the output from a computation.
Pseudo Packet	A telemetry packet consisting of external pseudo MSIDs. External pseudo MSIDs are generated (either by EHS computations or scripts), packetized and multicast on the project LAN.
Pulldown Menu	A list or menu of possible options that is hidden under a general phrase and invoked by clicking the left mouse button.
Pushbutton	A control that causes an immediate action. To press a pushbutton on the screen, point to it and click the left mouse button.
Radiobuttons	A group of buttons that allows users to make only one selection at a time. Radiobuttons are small diamond-shaped buttons.
Range-dependent	A parameter whose occurrence in telemetry is dependent on the value of a range parameter.
Real-time Data	Real-time data is telemetered to the HOSC and distributed for immediate use. Real-time telemetry data, received into the HOSC system and written to the NRT log, is indexed by its time stamps and other identifying information. When an NRT request is submitted that covers a particular time slice, this indexing information is used to meet that request.
Recall Text	Area within an application that allows users to input up to 256 characters.

Release	In PIMS, an action taken by the manager of a document or request that releases it from the baselined state back into the development state for modifications.
Resize Borders	The area that surrounds the framed area of an application, and is used to change the height or width of the window.
Resize Handles	Up to eight handles surrounding an object that allows users to resize objects, displays, or windows.
Review	In PIMS, the second state of the review cycle in which the document, change request or data request has been written and submitted for review and approval.
Sample Composition	Describes how the samples of a parameter are arranged in a major frame.
Scatter Plot	A plot that uses unconnected dots to represent the relationships among telemetry values.
Scratchpad Line (SPL) Directives	Provides users with the capability to start and stop displays, computations, and scripts. A user may also uplink and modify commands and update pseudo MSIDs through the use of SPL directives.
Script	A file containing a sequence of directives that can be invoked in a single step.
Scroll Bar	A control that allows the contents of a window area to be displayed without resizing a window or list.
Select Button	The mouse button used for most operations. By default the select button is the left mouse button.
Set Pushbutton	A pushbutton that allows a user to implement changes based on selections made within a dialog box. Reacts like the OK pushbutton and closes the dialog box.
Setup Message Area	The dialog box that allows users to change the number of lines displayed within the message area of the application main window.
Shareable	A flag has been set to allow other users to retrieve your UDE from the UDE Database and use it on their local workstation.
Shotgun	Parameter composition when the bits of a parameter are scattered in multiple non-contiguous words of a major frame.
Slider Box	A graphical component of the scroll bar, which is dragged to provide a different view of the same file, list, or text area.
State Code Calibration	A measurement is converted to a text state code.
Static Object	A graphical object that is not receiving telemetry data.
Status Bar	A feature that allows the viewing of application critical configurations within the main window.

Submit	In PIMS, an action taken by the manager of a document, change request, or data request in which the document or request is placed in a state of review and approval and released from development.
Subset	A collection of measurements from the total measurement set that is bounded as an integer number of octets but does not constitute the packet itself. A mini-packet.
Super	A parameter that occurs more that once per packet.
Superseded Database	If a baselined database already exists for a project and mission, before a new baselined database can be released, the current baselined database is designated as superseded.
Switch MSID	A parameter whose value determines which limit or calibration set will be used for the specified MSID.
TDM	Time Division Multiplexed - a technique for transmitting multiple parameters within a single serial bit stream by interleaving them, one after the other.
Time Indicator	Indicates that a group will be activated based on a defined start time and deactivated based on a defined stop time.
Time Plot	A plot against time containing up to four Y-Axis parameters.
Time Reference	A time format that is represented in either GMT or Mission Elapsed Time (MET).
Time Tag	A time reference marking an event. For example, a parameter goes out-of-limits at 230:16:00:00. The time tag for the out-of-limit event is 230:16:00:00.
Tip	A standard icon used within the HOSC user guide set to indicate that suggestions or hints are provided.
Togglebuttons	Small buttons that can be switched “on” or “off.” To switch a togglebutton, point to it and click the select button. Black indicates that the desired attribute is in effect or “on.”
Tolerance	Number of times the MSID exceeds the limit value before an EM warning message is issued.
Typical	Parameter composition when the bits of a parameter are contiguous.
Unprocessed	Raw telemetry data.
User-generated Data Element (UDE)	A user-generated file. For example, a display, script, computation, pixmap, etc., is a UDE.
User Data Summary Message (UDSM)	A PDSS Data Quality packet. Information contained in the packet includes: the start/stop time of the UDSM report period, the number of unplanned LOS occurrences, the number of BPDUs or packets per DSID received, the number of VCDU sequence counter errors, and the number of packet sequence counter errors per DSID.

Virtual Channel (VC)	A CCSDS construct whereby a physical communications channel is shared among different users, each of whom uses part of the available bandwidth for a virtual channel of CCSDS CADUs incorporating predetermined CCSDS identifiers for each user.
Virtual Channel Identifier (VCID)	A binary identifier located within the VCDU header, which when concatenated with the spacecraft identifier, uniquely identifies a particular spacecraft virtual channel.
Virtual Channel Data Unit (VCDU)	A CCSDS data set of specific structure and fixed length, which includes CCSDS specified headers and into which user data is packaged for transmission over the space-to-ground link.
Warning Limits	A color code (red) representing limit violations of a parameter.
Wildcard	Placeholders for other characters in a string. Three wildcards are permitted in most HOSC applications. The "*" represents any combination of characters and the "?" represents any single character. A blank can be used to replace a single "*" to indicate "all". Database applications use Oracle as their basis; therefore, "%" is used like the "*" and an underscore character "_" is used like the "?". Blank operates the same way in database applications as in other HOSC applications and represents "all."
Window Menu	The menu that appears when you press the window menu button, which is located to the left of the application title bar on a window frame. Every window has a system menu that enables you to control the position of the window.
Workspace	The area on a terminal where the windows of a user's environment appear. The workspace is sometimes referred to as a desktop or root window.
XY Plot	A plot that contains one X-Axis and up to four Y- Axes parameters.